247 OCTOBER
1936

SUPPLEMENT
No. 10

*The*

# Educational Record

*Report of the*

FIFTH EDUCATIONAL CONFERENCE

New York City

October 29 and 30, 1936

*under the auspices of*

The Committee on Measurement and Guidance of the American Council on Education,

The Commission on the Relation of School and College of the Progressive Education Association,

The Co-operative Test Service,

The Educational Records Bureau.

Published by
The American Council on Education
744 Jackson Place
Washington, D. C.

Mich. Univ. Membership
Direct
1-5-36

# The Educational Record

**Published Quarterly by**

**The American Council on Education**

*Editor:* GEORGE F. ZOOK

Volume 17 October, 1936 Supplement No. 10

CONTENTS

| | PAGE |
|---|---|
| Preface | 3 |
| Basic Responsibilities of General Education in America. *Edmund E. Day* | 8 |
| Some Fundamentals in Evaluating Educational Programs. *Burton P. Fowler* | 23 |
| The Problem of the English Examination. *John M. Stalnaker* | 35 |
| The Program of the American Council on Education. *Raymond A. Kent* | 49 |
| Changing Values in Educational Measurement. *E. F. Lindquist* | 64 |
| Testing and Guidance in a City Public School System. *Richard D. Allen* | 82 |
| The Arts in American Education. *Frederick P. Keppel* | 93 |
| The Integration of Personality in Secondary Schools. *Percy G. Kammerer* | 98 |
| The Psychological Basis of Remedial Reading. *Arthur I. Gates* | 109 |
| A New Concept of Intelligence and a New Method of Measuring Primary Abilities. *L. L. Thurstone* | 124 |

COPYRIGHT, 1936, AMERICAN COUNCIL ON EDUCATION

Rural Education and the Teacher ..... 139
*Edwin R. Embree*

Informal Question and Answer Session ..... 152

Sixth Annual Meeting of Institutional Members of the Educational Records Bureau: Committee Reports ..... 160

Symposium: Experiences of Schools Holding Membership in the Educational Records Bureau ..... 171

Study Habits and Skills ..... 171
*Hans Froelicher, Jr.*

The Use of Case Histories in Guidance ..... 180
*John R. P. French*

New Social Studies Test ..... 184
*Sydney V. Rowland*

Tests and Scholastic Guidance ..... 189
*Nelson A. Jackson*

Increasing Comparability of School Marks through Test Scores ..... 193
*Ralph D. Britton*

The Persistence of Individual Differences in Relation to Guidance ..... 197
*Galen Jones*

# PREFACE

The Fifth Educational Conference was held at the Hotel Roosevelt on October 29 and 30, 1936, under the auspices of the Committee on Measurement and Guidance of the American Council on Education, the Commission on the Relation of School and College of the Progressive Education Association, the Co-operative Test Service, and the Educational Records Bureau. The sixth general meeting of institutional members of the Educational Records Bureau was held in conjunction with this conference.

The sponsoring organizations have a common interest and point of view in regard to the philosophy of educational measurement and guidance. They believe that education should be primarily concerned with the individual, and that the learning experiences provided should be suited to his needs, interests, and abilities. Before this can be done adequately, the teacher and school must learn as many facts as possible about the pupil's abilities, achievements, and rate of development. To secure reliable, objective information about pupils so that teachers and counselors can provide wise, constructive educational guidance is the primary purpose of all educational measurement. Tests have certain values for research purposes, but their chief importance is in the diagnosis of individual needs, and in the adaptation of instruction to meet these needs.

The development of testing and measuring techniques has outrun the understanding and ability of educators in general to use the new methods. Testing techniques in themselves have no value apart from the use that is made of them in the actual practice of schools. One of the objectives of the conference, therefore, was to report on new developments in testing and guidance work and to encourage the schools to use the more promising materials and procedures in adapting the curriculum to the individual pupil. Teachers and test technicians are apt to have different attitudes toward tests, and

it is important that they should understand each other's point of view and co-operate in solving their common problems.

That there is widespread interest in educational measurements and their use in the guidance of pupils is shown by the fact that approximately 600 persons registered at the conference this year. Among the delegates were 160 representatives from colleges and universities, 269 from independent elementary and secondary schools, 101 from public schools, and 24 from educational associations and foundations. It is interesting to note that the registration data indicate an increase of about 150 over the attendance a year ago.

At the first session of the conference Thursday morning, Dr. Francis Parkman, headmaster of St. Mark's School, presided. There were three papers presented at this session and an opportunity was given for discussion following each presentation. Dr. Edmund E. Day, director of social sciences and general education for the General Education Board, discussed "Basic Responsibilities of General Education in America." Mr. Burton P. Fowler, headmaster of the Tower Hill School, read a paper on "Some Fundamentals in Evaluating Educational Programs." Mr. John M. Stalnaker, research associate at Princeton University, spoke on the technical difficulties involved in "The Problem of the English Examination."

Dr. Richard M. Gummere, chairman of the Committee on Admission of Harvard University, presided at the luncheon on Thursday and introduced President Raymond A. Kent of the University of Louisville. President Kent's subject on this occasion was "The Program of the American Council on Education."

Dr. Frederick H. Bair, superintendent of Bronxville Public Schools, presided at the afternoon session. Dr. E. F. Lindquist, associate professor of education at the State University of Iowa, spoke on "Changing Values in Educational Measurement"; and Dr. Richard D. Allen, assistant superintendent of Providence Public Schools, described "Testing and Guidance in a City Public School System." Thursday evening there was an informal question and answer session

with Dr. Lindquist and Dr. Allen serving as leaders. The session was largely devoted to a discussion of the papers which had been given in the afternoon, but there was also a general exchange of experiences with regard to problems of testing. Dean Max McConn of Lehigh University was the chairman for this session.

At the meeting Friday morning, President Henry T. Moore of Skidmore College presided. The first speaker was Dr. Frederick P. Keppel, president of the Carnegie Corporation of New York, who discussed "The Arts in American Education." Dr. Percy G. Kammerer, provost of Avon Old Farms, then spoke on "The Integration of Personality in Secondary Schools." Dr. Arthur I. Gates, professor of education, Teachers College of Columbia University, concluded the morning session with a discussion of "The Psychological Basis of Remedial Reading."

Dr. Eugene R. Smith of the Beaver Country Day School served as chairman for the luncheon session on the second day of the conference. Dr. L. L. Thurstone, professor of psychology at the University of Chicago, read a paper which he illustrated with slides on "A New Concept of Intelligence and a New Method of Measuring Primary Abilities."

The Sixth annual meeting of institutional members of the Educational Records Bureau formed an important part of the conference. Thursday afternoon and evening the five committees of the Educational Records Bureau held their annual meetings and prepared reports of their activities to be presented at the general meeting the following day. The members of the committees were guests of the Bureau at an informal dinner Thursday evening at which Mr. R. J. Shortlidge of the Pawling School served as host. Mr. Shortlidge expressed to the members present the appreciation of the Bureau for their help in serving on the various committees. He felt that the Bureau should be congratulated on its growth and its success as a co-operative enterprise.

The Board of Trustees of the Bureau also met Thursday evening and announced the election of the following three new members to the Board: Mr. Allan V. Heely, headmaster

of the Lawrenceville School, as a representative from the independent schools; Dr. Frederick H. Bair, superintendent of the Bronxville Public Schools, as a representative from the public schools, and Dr. Richard M. Gummere, chairman of the Committee on Admission of Harvard University, as a representative from the colleges and universities.

The general meeting of the representatives from member schools of the Educational Records Bureau took place Friday afternoon. Since the meeting was of general interest, all those present at the conference were invited to attend whether they belonged to schools holding membership in the Bureau or not. Mr. George A. Walton of the George School presided at this meeting and called first for the reports from the chairmen of the following five Educational Records Bureau committees: Independent Schools Advisory Committee, Public Schools Advisory Committee, Committee on School and College Relations, Committee on Relations between Elementary and Secondary Schools, and Committee on Tests and Measurements.

The second part of the symposium meeting was a discussion of the experiences of schools holding membership in the Educational Records Bureau. Contributions were made by representatives from Mount Hermon School, The Cambridge School, Park School in Baltimore, The Loomis School, Radnor Township Schools, and Plainfield High School. The papers presented by the symposium speakers, together with summaries of the reports of the committee chairmen, appear in this report following the main addresses.

The final session of the conference was a dinner Friday night at which Dean Herbert E. Hawkes of Columbia College presided. Dr. Edwin R. Embree, president of the Julius Rosenwald Fund, spoke on "Rural Education and the Teacher."

One of the features of the conference which aroused considerable interest was the demonstration of the new International Test Scoring Machine. The inventor of the machine, Mr. R. B. Johnson of the International Business Machines Corporation research staff, was present at the conference to

demonstrate the machine and answer questions about its uses and limitations. The machine scores tests of 150 items or less at the rate of about 1,000 an hour with greater accuracy than they can be scored by hand. This model of the scoring machine has been thoroughly tried out and gives promise of revolutionary changes in testing and guidance programs, particularly in the public school field. It is hoped that the machine may be made generally available some time during 1937.

Mr. Thomas J. Watson, president of the International Business Machines Corporation, was a guest of honor at the dinner Friday night. As an expression of appreciation for Mr. Watson's generosity in supporting the years of patient research that culminated in this successful scoring machine, the conference passed the following resolution:

WHEREAS, The manual scoring of objective examinations has hitherto constituted the most serious obstacle retarding the technical development and use of new instruments for more exact educational measurement and diagnosis; and

WHEREAS, Mr. Thomas J. Watson, president of the International Business Machines Corporation, has made possible an effective solution of the problem which promises to exercise a far-reaching influence on all educational measurement and guidance; now, therefore, be it

*Resolved,* That we, members of the organizations indicated below and in attendance at this Fifth Educational Conference held in New York City, October 30, 1936, do hereby express to Mr. Watson our admiration for the achievement accomplished under his auspices and our gratitude for his farsighted generosity in doing handsomely for the cause of Education a lasting service. With his genial wand he has at a stroke lifted from teachers and from institutions everywhere tedious and annoying burdens and has placed at their convenient disposal instruments of great educational value and promise. We consider him and his organization as signal benefactors of the cause to which we are devoted.

The American Council on Education
The Progressive Education Association
The Co-operative Test Service
The Educational Records Bureau

# Basic Responsibilities of General Education in America

IT HAS been my privilege during the past six years to serve as a member of the Board of Education in the nearby suburban village of Bronxville, New York. The program of education in the Bronxville schools is frankly experimental. In the opinion of many, it is eminently successful. But opinions differ. There are those who regard the Bronxville school program as thoroughly unsatisfactory. These contrary views have given members of the Bronxville Board ample ground for reflecting at length on the fundamental purposes of publicly supported general education in the United States. While I have no authority to speak for other members of the Bronxville Board, I venture to offer my own lay views on this subject in the interest of some clarification of issues at once complicated and exceedingly important.

No single address of no more than tolerable length can possibly deal adequately with all the responsibilities of general education in our complex contemporary civilization. The subject spreads out through practically all the more significant phases of individual and social life. All I can hope to do on this occasion, therefore, is to deal with certain selected aspects of the subject. I shall confine my remarks to those responsibilities of general education which I regard as primary or basic, and to these primary or basic responsibilities as they relate particularly to our American society at the present time. Even with this more restricted approach to the broader subject, it will become clear that my observations are set in a framework for which there are alternatives, and that some of the emphases I shall give or fail to give are open to challenge. None can question, however, that certain conclusions within the subject greatly need clear formulation and more general acceptance, hence my willingness to present one definite line of analysis. May I add that I claim no novelty in the views

I have to present. I am sure that there are many in this company who have long entertained them, in large part if not as a whole.

Let me say at the outset that my thinking with regard to general education rests at bottom on the fundamental thesis that general education is a social function. The ultimate responsibilities of general education are social responsibilities, that is, responsibilities to society. Let no one suppose that this thesis implies an over-all political entity—a state—which may deal lightly with the lives of the individuals who live within its orbit. In America we subscribe to no such doctrine. We believe in a society which recognizes the dignity and worth of the individual and establishes the necessary conditions for his or her many-sided, worth while living; we believe in a government that establishes common justice and promotes general welfare. But these very ideals make it essential that individual interests be bent to social ends. Individuals may expect to be benefited by general education; most assuredly they are; but the advantages they obtain through general education are ultimately warranted only as they serve more than individual aims. It is quite clear that no persistent clash between individual and social advantages can be tolerated in the provision of general education in any enduring culture. Fortunately, subject to certain limitations which have to be recognized, individual benefits and social advantages can be wisely and successfully fostered through general education at the same time and by the same means.

Broadly speaking, the social responsibilities of general education fall into two main categories: (1) those directed toward the maintenance of social solidarity and stability; and (2) those designed to promote social differentiation and change. The first of these broad divisions of function has to do with transmitting and perpetuating the culture, the second with adjusting and elevating it.

That transmitting and perpetuating the culture is a primary function of general education is manifested in all forms of

human society from the most primitive and simple to the most advanced and complex. Human society as we know it could hardly persist did not each succeeding generation in large measure adopt the customs, the habits, the manners, the morals, the modes of thought, the prejudices and the preconceptions of the preceding generation. This process of social imitation is maintained, of course, by a wide variety of social agencies and forces of which the school is only one. But the extent to which the school is made responsible for transmitting the culture is increasing rather than diminishing. It is more than ever important, therefore, that the school should see clearly what is involved concretely in the discharge of this fundamental duty.

The rôle of general education in modifying and elevating the culture is not so evident. In general, it is safe to say that impulses making for social change have had their immediate source largely outside the school, and that the marvelous advances in science and technology which have characterized civilization of late have had little direct connection with the processes of general education, at least as formally organized. Moreover, it is clear that there will always be serious restraints imposed upon any attempt by the schools openly and explicitly to change the social order. Yet, beyond question, general education in some of its phases can be a ferment from which social changes are almost certain to spring. At any rate, it is to be recognized that, whatever may be the record of the recent past, general education has important contributions to make to social progress and that certain specific objectives should be set to this end.

In this connection it should be observed that the two types of functioning for general education which have been noted are to some extent in opposition to one another. There is, hence, a fundamental problem of keeping disparate functions in appropriate co-ordination or balance. In our own times social changes have been so extensively and rapidly induced that the maintenance of social stability has become a task of

huge proportions, taxing the resources of education in all its varied forms and phases. For the time being, the more pressing duties of general education relate to ways and means of effecting an adequate social solidarity. Increasingly it is becoming clear that the whole people must share common convictions, loyalties, and enthusiasms if any social order is to hold together and be efficient. The authoritarian governments of Europe are demonstrating one way to meet this basic requirement. Can the great democracies with equal pointedness show another but profoundly different way? I believe they can if they will but apply their utmost resources to the task. The problem is one of social discipline. Unless as a people we can develop such a discipline on a voluntary basis —unless, in other words, we can discipline ourselves—the coercive authority of some group employing force will impose the necessary social discipline we have failed to develop. For the time being, general education must make this general problem of the ways and means of social solidarity one of its prime concerns. Such social changes as are accelerated should be those which conduce to that underlying stability without which other social changes cannot possibly contribute to social progress.

With these general observations in mind, let us now turn to the more concrete analysis of the responsibilities with which here and now in America general education is faced. These responsibilities can best be examined in terms of specific outcomes to be sought. Five broad types of outcome may be distinguished: (1) the acquisition of basic skills; (2) the formation of habits; (3) the cultivation of interests, sensitivity, and appreciation; (4) the promotion of knowledge and understanding; (5) the inculcation of attitudes and ideals.

The most obvious responsibilities of general education relate to the mastery of certain basic skills. No one questions, for example, the importance in the schools of the three R's. Communication in the mother tongue is so indispensable to

our culture that we take for granted the necessity of teaching all to speak it, to read it, to hear it, and to write it. But the standards we set in this connection are lamentably low. In regard to oral use of language the schools do little; the job is supposed to have been completed before the children come to school. Neither in speaking nor in listening do most schools undertake seriously to cultivate greater skill. Teaching to read, on the other hand, looms as the largest single assignment of the early grades. While results upon the whole are gratifying, much more could be done to cultivate reading with understanding. Writing gets attention, but attention in many schools is inadequately or ineffectually given. As far as simple handwriting is concerned, the outcomes appear to be generally satisfactory. But writing as a means of lucid self-expression remains for most an unknown art. In general, it can be said that much still remains to be done to discharge fully the responsibilities of general education with respect to those skills which involve the use of the mother tongue in both the oral and the written forms. Educational experimentation and innovation, whatever its promise in other directions, should not be permitted to obstruct the progress that needs so much to be made in teaching our youth how to use more satisfactorily the language in which our culture communicates.

Another basic skill that clearly has to be mastered by all has to do with the elementary arithmetic operations. Numerical concepts, quantitative relationships, units of measurement, and arithmetic processes permeate our day-to-day existence. General education must see that all learn how to deal with them in their simpler forms. This does not imply an extended course of rigorous mathematical training even of an elementary sort; it does imply sustained instruction on how arithmetical operations are to be applied in concrete situations. To a surprising extent the mathematical training now included in general education fails to give social competence; it should be made to do so.

To the extent of the individual's capacity, general educa-

tion must concern itself with the cultivation and exercise of intellectual power. It may be that some of you will think that this is an obligation that may be taken for granted. I do not think so. While much lip-service is paid in educational circles to the importance of intellectual growth through education, actual school practices, especially in these days of wide educational experimentation, are ofttimes distressingly weak in their service to that end.

A part of the present deficiency appears to stem from what may be called the data complex. Informational outcomes of instruction are badly overrated; data returned to the instructor intact, one might almost say in the original wrapping unopened, are assumed to have been in some mysterious way profitably assimilated. Power to remember and to repeat is often all that is requisite to successful completion of the work.

It is, of course, fairly obvious that this type of experience bears only indirectly and not always significantly on the development of intellectual power. Not that memory is to be regarded as of no educational consequence, and knowledge as an educational impediment. There is not the conflict between knowing and thinking that some statements would lead one to infer. No one has yet succeeded in demonstrating that constructive thinking can take place in a factual vacuum. But at times thought does get mired in an ooze of unorganized facts, and research lost in a forest of trivial data. What is especially needed in the cultivation of intellectual power is repeated and varied experience in the critical analysis of manageable material, in the formulation of appropriate inferences, in the interpretation of data, in the organization of material, and in the solving of problems. Standards of accuracy have to be evolved and applied. The processes of thought and expression have to be disciplined through exercise in the principles of grammar, rhetoric, and logic with a view to expressing thought in words and ordering thoughts in logical form. The nature of proof, and of induction and deduction have to be learned from concrete cases. Growth of

intellectual power, particularly in its constructive and creative phases, is far from a simple and easy achievement; it requires most careful training and sustained and rigorous effort. In general, our schools are failing to bring it about in anything like the measure they should. Intellectual power is no social panacea; not too much should be expected of it; but the fact remains that in the long run the exercise of intellectual power is at the same time one of the surest sources of human satisfaction and one of the indispensable bases of social progress. In so far as we retain an abiding faith in intelligence, the cultivation of intellectual power must remain one of general education's primary responsibilities.

Beyond the skills displayed in using the mother tongue lie certain skills involving the employment of non-verbal forms of expression. Ability to use these diverse art forms is of great significance if civilization is to be ennobled and life enriched. The esthetic capacity which lies dormant in a host of people, young and old, is only now coming to be recognized. Progressive education has amply demonstrated that impressive results are to be had in this area. General education should do much more than it has to discover and develop skill in non-verbal expression in all its diverse and intriguing forms.

General education may also wisely acknowledge responsibility for the development of certain sensory and motor functions to a higher level of efficiency. Thus visual discrimination can be sharpened, tactile sensitivity heightened, manual dexterity increased, bodily co-ordination improved in ways that are bound ultimately to prove fruitful. The immediate educational results from such training may not be evident, but by and large the more general education can be directed toward the mastery of general skills, as contrasted with purely formal informational outcomes, the more permanent and substantial are likely to be its effects. This is especially true, of course, in the earlier stages of general education when students are still in the highly formative stages of individual development.

The second group of responsibilities of general education concerns habit formation. There are those to whom the assumption by the schools of any responsibility for student habits appears to lead inevitably to educational confusion. I do not share this view. On the contrary, it seems to me clear that the schools are bound willy-nilly to play an exceedingly important rôle in the formation of habits. The questions are: How frankly do the schools acknowledge the rôle? How seriously do they play the part? How successfully do they carry it out?

It is a highly important fact that the first sustained systematic application that most children experience is in the classroom. Work habits with most children are *made in school.* This is conspicuously the case, of course, in as far as the work habits have to do with intellectual effort. It is of the utmost importance, therefore, that the school face explicitly its responsibility for these work habits and take appropriate measures for assuring their satisfactory formation. In the early acquisition of sound habits of work lies a good share of subsequent individual growth and development.

What are the characteristics of the habits that need to be acquired? Doubtless the list might be made long. I mention only a few that seem to be most important: persistence, reliability, patience, courage, initiative, and an accountability to one's own standards of excellence. Too commonly the school tolerates passable results to the impairment of the habits of work. Students need to experience the satisfactions to be derived from tasks done to the best of their capacities. They need to be taught the values of self-initiated and self-directed endeavor. In fact, self-driven education needs to become a firmly established personal habit. Only when education becomes an individually accepted responsibility are desirable outcomes assured. In these connections, general education faces some of its most essential obligations. Good work habits are hard to form; they dissolve rapidly in the acid of slovenly practices. General education must see that

they are much more successfully nurtured than they are now by many classroom procedures.

In addition to the attention to be given to work habits, care must be exercised to promote better health habits. On the side of physical health much has been done and is being done; on the side of mental health, school procedures are still largely hit or miss. To a considerable extent well-grounded techniques directed toward mental hygiene are not yet in hand, but progress is being made and ultimately the schools can do a great deal. That general education must accept serious responsibilities for the physical, mental, and emotional health of young people in the schools cannot be seriously questioned.

A third group of responsibilities of general education has to do with the cultivation of interests, sensitivity, and appreciation. It is through the expansion and elevation of the range of spontaneous response that the prevailing culture is ultimately to be improved. Fortunately, there is in most young people a vast deal of native curiosity, a wide range of initial sensitiveness, and a large reservoir of fresh appreciations. These potentialities the schools must realize and capitalize. Social sensitivity needs to be fostered, the love of beauty cultivated, intellectual drive stimulated, and avocational and recreational hobbies induced. During childhood, interests are narrow and self-centered. Gradually the child's universe of acquaintance and interest must be expanded and objectified. Happily, the means by which we may all satisfy many of our desires are now so enlarged, and through public institutions and services—e. g., our parks, our libraries, our museums—made so widely and freely accessible, that the enrichment of life has become in substantial measure a matter of awakening and establishing worth while, many-sided interests. Herein lie the possibilities of a durable zest in living. It is to be noted that our better schools are already demonstrating what can be done along this line. In the development of wider and more worthy interests, general education faces one of its clearest and most important opportunities.

In the spread of knowledge and understanding, general education carries still another set of responsibilities. In a sense, these are its traditional responsibilities. Through general education, students are expected to acquire knowledge of the physical universe, the social order, and the cultural heritage. To a considerable extent, students do acquire such knowledge. They might acquire more than they do, however, even with no greater outlay of time and effort, if study materials were less extensively organized as formal, logical, systematic disciplines unrelated to the backgrounds and interests of the learner. After all, if the goal be appreciative understanding of the world about, the learning arrangements must be so set as to make clear contact with the world *in which the learner lives.*

This principle becomes even more controlling as the school moves into certain new and relatively undeveloped fields in which the attainment of better understanding is of supreme importance. I refer to the fields of human development and human relations. To a surprising extent formal education has failed to deal with some of the matters which concern us most intimately and affect us most vitally. What is the nature of human development in its physical, mental, emotional, and social phases? How are the normal and the pathological conditions to be distinguished? Of what do wholesome human relations consist and what forms do they take? Questions such as these serve to suggest areas of human experience in which more understanding, widely diffused, is greatly to be desired. The responsibilities of general education in the promotion of understanding are well established and clear. What they need is substantial redirection and more effective implementation in concrete school programs.

A supremely important group of responsibilities of general education relate to the inculcation of attitudes. Here again there are those who will resist the idea that general education should acknowledge any such purpose. As a matter of fact, the schools cannot possibly avoid a large measure of respon-

sibility for attitudes. This follows partly from the fact that other agencies are unwilling or unable to assume the burden, and partly from the more important fact that for youth pervasive influences inhere in the very nature of school experiences. For good or bad, the schools are bound to affect the attitudes of those who attend them.

If in this connection we think of the schools as playing a primary part in the transmission and perpetuation of American culture, we are bound to ask what elements in this American culture call especially for the inculcation of attitudes. The answer lies in large measure in the concepts and traditions of American democracy. Democracy, at least in its American version, consolidates two basic doctrines: (1) the maximization of individual growth and development through freedom and the largest possible equalization of individual opportunities; (2) the settlement of controversies between groups or classes of individuals by peaceful means through resort to discussion, persuasion, the ballot, acceptance, and appraisal. On the one hand is an ideal of social progress; on the other, a way of social adjustment. On the one hand is an urge toward a broad and expanding humanitarianism; on the other, a commitment to the ways of peace in human association. If adherence to these popular ideals means some sacrifice of the immediate national efficiency, the American people are prepared to see this price paid; even at a cost, the fundamental doctrines of the American democracy are to be respected. It is within the framework of these doctrines that American history has been written. It is to these doctrines that the loyalties of the American people are pledged. It is in these doctrines that the core of American culture is to be found. With the transmission of these doctrines from generation to generation the American schools must be profoundly concerned.

What I have just stated is something more than a plea for a typical program of Americanization. What the schools need to get at is a constellation of attitudes. As a social

order, we face growing collectivism. Of this, there cannot be the slightest doubt. No longer can the common interest be thought to emerge as the net resultant of the interplay of freely activated individual enterprises. No longer, in other words, can we rely so largely on the invisible hand of Providence so often cited by the classical economists. The individualism we have known has played its part. On the whole, it has played it well. But it must give place now to a tempered, moderated individualism, effectively conditioned to serve the public interest.

One of the fundamental bases for such a new individualism is to be found in the early shaping of individual attitudes in actual social situations. School life is a succession of social situations. For the young, these situations can be made real and vital. They can be made, through actual responsible participation, to inculcate appropriately socialized individual attitudes. Consideration for others, friendliness, sympathetic understanding of associates, toleration of individual differences of character, of ability and of opinion, fair play, team play, honesty, willing co-operation, wise leadership, loyalty to group interests, a desire for justice—these are among the attitudes that can be fostered. Obviously the desired results are not to be obtained by mere platitudinous preachments; they require wise and adroit handling of a wide variety of educational procedures. If school activities consistently stress the competitive, at times, the combative, one type of individual will emerge; if school activities commonly and constructively take co-operative forms, a different type of individual will appear. At bottom, the problem is one of balance: the values residing in individual achievement must be in substantial measure preserved, while the values to be secured from successful co-operation must be fostered. The possibilities along this line can only be realized as educators recast school procedures with wise regard to the attitudes to be induced. That the possibilities are of great significance seems to me self-evident. It is in this sector of the educational front that

in my opinion the schools may wisely "dare to build a new social order."

Let me add one further word about attitudes. Adherence to the American tradition of democracy should not be left by the schools to chance, nor, as I see it, to the ineffectual and essentially misdirected methods of instruction now commonly employed. The youth of the nation should be made familiar with the heroic efforts through which individual freedom, after centuries of struggle, was finally achieved. They should be made to appreciate the incalculable values which individual freedom brings to human aspiration and achievement. They should be made to see that resort to force as a mode of social adjustment is a negation of the principles on which American ways of life are based. They should acquire an unswerving loyalty to the American tradition of democracy. They should be led to work for it, to devote themselves to it. If all this involves indoctrination, I am for indoctrination, and let it be skillful and effective indoctrination. In the inculcation of fundamental attitudes general education in America faces its gravest responsibilities.

It should not be necessary in any company of educators to point out that the outcomes which have been cited can only become real and effective as they are embodied in the individual lives of oncoming youth. This involves the fundamental problem of achieving personal integration in growth and development. It is this integration in the individual, not integration in the curriculum, that is the fundamental consideration. Skills, habits, interests, understanding, and attitudes have to be cultivated and established as an organic whole, and with a nice regard to the capacity of the individual to submit to change and to effect a sustained personal development. An underlying sense of personal adequacy and security is indispensable. This is best attained through successful use of one's own expanding powers. As competence is demonstrated, self-assurance grows. As self-assurance develops, competence increases. Gradually there emerges a power to deal with

significant new situations and experiences. Of course, the innate conditions of individual growth and the stubborn facts of the physical and social environment raise obstacles; these must be recognized in seeking the attainment of all educational objectives, but the maintenance of the integrated personality must always be a governing principle.

Let it not be thought that the foregoing analysis of the responsibilities of general education in America is for the most part so general in its conclusions that no specific teaching content is indicated. On the contrary, the responsibilities that have been noted can be translated into concrete school procedures. It is of great importance that they be so translated, and so translated with educational imagination and social vision. Moreover, it is of great importance that measures be developed, as they can be, for ascertaining the extent to which the stated aims are attained and the responsibilities successfully discharged. It is time that general education in the United States was brought to more strict accountability. It is not too much to ask that larger results in social competence, in esthetic appreciation, in intellectual capacity, in common understanding and in human sympathy mark the graduates of our schools. The stakes are so great that no avoidable risks of failure can be permitted. Unless we are prepared to abandon our cherished American ways of life, the basic responsibilities of general education must be clearly identified and effectively met, and so met with a minimum of delay.

In conclusion, it is to be noted that the analysis of the responsibilities of general education which has been presented has dealt largely in terms of underlying purposes and educational outcomes. It has intentionally avoided questions of pedagogical procedure. It has said little or nothing about the nature of the learning process; the rôle of student interest; the place of discipline; the importance of making school experiences meaningful to the pupil; the indispensable qualities of the good teacher; the necessity and the means of adjusting

education to individual differences; the supreme importance of adapting teaching methods to the nature of the child in his or her successive stages of physical, emotional, intellectual, and social maturation. In the successful discharge of the responsibilities of general education these matters of procedure demand all the resources of knowledge, wisdom, patience, and courage that educators can bring to bear. By and large, the changes that have been taking place in the classroom during recent years exhibit positive improvements. Substantial progress has been made in teaching techniques. It is partly because innovations are being introduced, school programs reformulated, classroom procedures recast, and teachers retrained, that it is essential that basic purposes be clearly recognized and, if necessary, redefined. The ideas I have presented to you are an attempt to contribute to this end. More concerted efforts, however, are in order, for few social forces can so vitally affect the course of human events over the next generations as those which reside actually or potentially in formally constituted general education in our American democracy.

EDMUND E. DAY,
*Director of Social Sciences and General Education,*
*General Education Board*

# Some Fundamentals in Evaluating Educational Programs

NO ONE can deplore any longer the lack of experimentation in the secondary school. While profound changes are not apparent, the administrator or teacher who stands pat is a rare bird. We are now experiencing some of the pangs that follow the first reactions to change, and these twinges are making us cautious. One hears less of condemnation and more of appraisal. We are probably approaching a rather wholesome consensus that there is no magical, brand new form of high school that will—presto!—cause all the old evils to disappear; that there is no one perfect type of administrative organization and curriculum that will usher in Utopia. We are beginning to sense the inadequacy of revolution in education as many of us are suspicious of it in government.

Instead, by beginning where we are, we may, by carefully tested next steps, arrive at a place further along the path of progress than we were; or we may find that what we thought was progress was only change.

After "four long years" of struggle under the Eight-Year Study we are not less hopeful but more humble. We are hopeful because we have met with varying degrees of success the challenge of a new and stirring opportunity; humble because we see how little has been done that needs to be done and how serious is the responsibility of trying to judge whatever results we have had thus far.

It is notable that the new curriculums of the thirty schools are, on paper, neither especially novel nor impressive. The smaller pieces of furniture have been moved about, but the piano is still in the only corner where there was room for it, and the bedroom is still a typical bedroom. About the best we can claim is that we have installed electric lights, so that we can find our way about better.

You will recall that the paper programs of the thirty schools reveal four principal types of curriculum organization. (1) Subject-matter sequences in the major fields of cultural experience, such as the arts, science and mathematics, the social studies, and the languages. This plan was already in effect in the schools selected for experimentation under the Pennsylvania Study. (2) The culture-epoch plan, by which certain courses, like English, history and the arts, or science and mathematics, or other combinations of traditional fields were fused in a problem-solving approach to one of the great culture epochs of history. This principle was borrowed essentially from programs that have been carried out successfully in the elementary school. (3) The directly functional organization of human relations in such areas as health, community life, use of leisure, and vocations. (4) Individually planned curriculums based on the interest of a single pupil or more frequently, a small group of pupils with common interests and needs.

It should be unnecessary to point out that these plans are not sharply distinguished from each other or completely consistent in their execution.

In September, 1936, some 1,100 pupils from these thirty schools have entered college after an experience of three years with the foregoing educational plans. Quite obviously no one, least of all the speaker, is yet qualified to evaluate the significance and net gains of this experience. We do have faith, however, much stronger than we had three years ago that these plans can and will be evaluated. We are beginning to see that types of evaluation, quite as significant as grade-placement by means of achievement tests, can be worked out to ascertain the validity of a given educational program. You are doubtless all familiar with the progress of Dr. R. W. Tyler's staff in undertaking this bit of pioneering.

I am not attempting, therefore, in this paper to say how far we have succeeded, or to appraise the validity of our programs. Rather, I shall try to show some of the things the

new electric lights have revealed—a good deal of shabbiness, some evidence of taste, a number of badly crowded rooms, a lot of Victorian curly-cues, and not a few dust rolls under the bed.

The first need that has from the outset been brought home to us is the formulation of concrete objectives, so stated that they would be constantly available by which to steer a course. Educational objectives have ever been, of course, the most platitudinous and anesthetic of all our educational patter. This fact should not, however, obscure their basic necessity for us but challenge our ability to make them real. The trouble with most objectives of the past has been that they were made *for* teachers rather than *by* them. Being the product of commissions of experts or research specialists, they were stars so remote that we were never quite able to get our chariots hitched up to them. Our own staff, for example, after several years of work, has agreed upon four main objectives for our work which are neither new nor startling, but, because they were the product of our own thinking and experience, have become powerful directing forces in our everyday work. We have merely re-discovered some obvious truths which have a fresh potency for us because they are our own conclusions. Briefly stated, these objectives are as follows:

We wish the progress of our pupils to be evaluated by four standards: Have they capacity for critical thinking? Can they understand the value of co-operative endeavor? Do they have a sense of values, derived from many forms of appreciation and expression? Do they possess mental and physical health? Over-simplified, these become *critical-thinking, co-operation, appreciation,* and *health.* Of course, in our formulation of these, we have many subdivisions and fancy circumlocutions, but the four questions I have stated constitute for us the major aims which are guiding us from day to day in our plans and procedures. A subcommittee of the faculty is responsible for the continuous revision and evaluation of each of the four objectives. Every member of

the staff serves on one of the committees, and one member serves as a general co-ordinating chairman. After much revision and refinement of plans, we have at present a fairly simple, workable scheme for the evaluation of each of these objectives for every pupil from the kindergarten through the twelfth grade. Objective evidence in the form of written data is collected, organized, and edited, so that at the end of each year a compact, carefully prepared summary is available as evidence of the degree to which each pupil has achieved progress toward the four goals. I would not have you understand, of course, that this is perfectly done. If it were, we could cast into outer darkness the inventor of the perfect mouse trap, but it is true that we have made progress, real progress, in one of the most difficult problems our faculty has ever attempted.

I have spoken, disparagingly perhaps, of the lack of sensational novelty in the new programs of the thirty schools. I am inclined to believe that this is the highest compliment that could be paid them. The Eight-Year Study was not undertaken to build new curriculums; it was undertaken to improve the attitudes and abilities of high school pupils, so that their work would have more significance for them, their habits become more efficient, their transition to college made with less friction, that is, in general to have our boys and girls achieve maturity where they were formerly immature. We wanted them to be capable of greater self-dependence; to be able to use books widely and wisely; to budget their time; to escape the slavery of rewards and penalties; to read with discrimination and to write with facility; to use their imagination more freely and creatively; to keep their minds alert and undulled by a meaningless, lesson-learning school routine. I suspect that the high school of the future will not be so strikingly different from that of the past in subject matter content as it will in ways of behaving. It is in the field of behavior—that is, motives, purposes, and conduct—that some day will enable the secondary school to come into its own.

With this point of view established, partly the substance of things hoped for and partly fulfillment, I should like to suggest a few of our experiences and misgivings that have caused humility to be substituted for cocksureness.

One thing we discovered early was that in planning any program or reorganization we must take pupils into our confidence and convince them that they are not guinea pigs. Pupils more than teachers rarely lose sight of the fact that they grow up but once; and, although an experiment may not be disastrous to a school, it can do irreparable damage to the individual—an inescapable fact that has doubtless retarded educational progress. If a general feeling of insecurity on the part of students is coupled with an inevitable feeling of insecurity on the part of teachers, a new curriculum is doomed to failure before it is fairly launched. It is all very well for the educational theorist at a safe distance to say airily: "That is unavoidable. If your school is unwilling to take the risk of failure, you should not have accepted the responsibility in the first place." Such a rebuke may be merited for schools that are frankly experimental and are known by their patrons to be such, but most of the thirty schools make no pretense to being laboratory schools. They are just average or better than average American public and private schools that desired freedom to make certain changes about which their staffs had deep convictions. Well, that hurdle has been safely cleared, I believe, for most of the schools, but it has meant a constant interchange of views between teachers and pupils, between teachers and parents, between pupils and parents, and most of all among the teachers themselves. This sharing of ideas has been in itself one of the most tonic effects of our participation in the Eight-Year Study. I suspect that among many of our most conventional schools little or no time is taken for establishing this continuous interchange of purposes and procedures, so that whatever is being attempted may have meaning for these three groups most vitally concerned: teachers, pupils, and parents.

The continuous quest for a common philosophy, not only in the whole field of secondary education, but in each separate educational unit, is a major need which the Eight-Year Study has sharply focused.

This problem is further complicated by the colleges. We most certainly were assured of their co-operation before the Study began. They have accepted in good faith our pupils three years later, and we confidently expect that they will place no obstacles in their path in college, but still the catalog remains as an ominous reminder that our pupils have not had a conventional preparation. They may have had four years of social studies instead of five years of foreign language; they may have omitted plane geometry; they may not have read Hamlet in the senior year; they may have devoted a quarter of their time to art and music. Even such minor deviations have raised doubts in the minds of sincere teachers. Are we planning wisely? Are the new experiences as valuable as the old? Will our pupils be well fitted to cope with the hard realities of a world where competition is still fierce, and copybook precepts soothe but do not disturb? We have had to resolve these doubts; we have had to make them our most valued assets. I suspect the greatest hazard of the traditional school is its absence of doubt.

Another question that constantly vexes and should vex every honest administrator is balance. An unbalanced budget is a trivial affair compared with an unbalanced curriculum. Deficits can be paid in installments for a hundred years without impairment of credit, but immediate bankruptcy may be the fate of a youngster who has not learned what he needs at the moment he needs it. The boy who enters the eleventh grade unable to read and write; who is without the background of skills, facts, ideas, and understandings needed for advanced study or entrance into a vocation; who has acquired slovenly habits of thought and expression, may be crippled permanently in doing successfully the thing he is potentially fitted to do.

There must be a certain ruthless definiteness in our programs, yet also an abundance of variety and free choice. Therefore we are constantly asking ourselves: Are there pupils doing the things they will need to do better than they would have done them under a more conventional program? Is their English composition excellent? Do their individual reading programs show range and richness? Have they had access to a variety of cultural fields? Are their likes and dislikes under control? Are their work habits efficient?

In a sense, of course, we need not lie awake nights thinking that these troubles would be wholly on our doorsteps, in view of the fact that the secondary curriculum ever has been so perennially unbalanced and the results so generally unsatisfactory that no one should hold us up to any especial scorn.

Another problem that continues to perplex us is the social studies. We have no misgivings about over-emphasis in this field, since it is hard to see how any intelligent person could justify our past, scanty treatment of human relations. The one-unit requirement which still characterizes our college admission officers' notion of balance in a curriculum remains as one of the most astounding curiosities of present day college preparation. But what does bother us, if we are honest, is what do pupils need to study at various age-levels about human society? I cannot answer this question, but I can ask several others. Are many of our new courses, and the old ones, too, for that matter, too heavily loaded with problems that are beyond the factual background and limited experience of our pupils?

A recent article in one of the professional magazines illustrates what I mean. The writer asks questions like these about the curriculum:

Is he (the high school pupil) proof against the obvious propaganda of radio, newspaper, and photoplay?

Is he an intelligent student of consumers' problems?

Does he have an understanding of the major social and economic consequences of machine production?

Is he familiar with the outstanding problems of his community?

Does he have a realistic and sympathetic approach to the social and economic needs of the population, and is he acquainted with the leading proposals for the solution of these problems?

How safe is it to consider such questions as immediate goals of courses in the social studies? Certainly many principles and facts related to their solution should be woven into the fabric of every such course, but the implication is that simple solutions to problems that baffle even the five leading candidates for the presidency are to be found by the sixteen-year-old boy. I fear that this tendency toward over-simplification of issues exists in many of our newer courses of study, to the extent that snap judgments, superficial thinking, and a negation of the very attitude of open-mindedness which youth needs to cultivate may result.

I am inclined to believe that the great contribution of the social sciences at every age level is to the understanding of those fields rather than the substitution of one bias for another. The teacher of social studies should inculcate values derived from the subject matter of the social studies and the application of these values should be left to the student's own thinking.

Let us not talk too blithely of culture-epochs, survey courses, and problems of democracy, unless we are sure that the background and maturity of our pupils is such that order instead of confusion may be the educational product. "For long years," says Dr. Whitehead, "the major aspect of education is the reduction of confusion to order, and the provision of weapons for this purpose."

We must be concerned with courses that are so skilfully organized that they will give to the learner a sense of satisfaction and continuous growth. He should be more concerned with techniques of thinking and with their application than with the acceptance of the teacher's recipes for current social ills.

Here, again, diffuseness and inadequacy can be safeguarded against by frequent discussion with our pupils to show them intrinsic values in their courses and evidences of their own growth. Frequent inventories in the form of standard tests, especially of the type being developed by Dr. Tyler's staff, as well as the usual essay examination, should help to give a pupil confidence in the concreteness of his learning.

Another general problem closely related to this one of the social studies has to do with the degree of provision we are asking for the maximum progress of the individual. There is a serious danger that we may be misled by the glitter of group achievement. Our pupils will go to college individually, not collectively. The achievement of the group will not help William when he finds himself in the college library faced by the task of finding out why revolutionary movements in Europe have had so little effect upon England.

A brilliant play based on Greek mythology, which has been written by two gifted pupils and presented by a tenth grade class of twenty pupils, may be an experience of rich social and esthetic values for the whole group; nevertheless, these values are certainly not identical for every pupil. Just what did this boy who ran the curtain and helped clean up afterwards get out of the enterprise? Something valuable, probably, but just what was it, as compared with that gained, for example, by the girls who wrote the play?

I should not like to be misunderstood as belittling group achievement. For many classes the play may be the one experience needed to fertilize the soil for the crop that is to follow, but let us make sure that we keep values carefully assorted and identified for the individual pupils.

Similarly, we are learning not to mistake other forms of glitter for gold. In general, I believe many of our modern courses may attach excessive importance to mere verbal facility. Many brilliant but superficial pupils, either in speaking, or in writing, can give the appearance of learning without having either studied or learned. Words frequently cover up lack of insight. One can air one's views on modern problems

with great glibness and be wholly devoid of scholarly qualifications and desirable attitudes. The clever student with verbal facility rates disproportionately high in most of our classroom discussions and written examinations. Let us try to organize our courses so that mere cleverness is not mistaken for solid achievement. And again, balance in the curriculum should provide for both the personal and the impersonal, for the inexact and exact type of content.

A final urgent need is a clarification of this whole question of integrated courses. As Dr. Briggs said in a recent paper: "I have no objection to fused courses, providing they do not merely melt base metals and offer the amalgam as pure gold." We want, of course, a better organization of the materials available for more significant courses in French, mathematics, and science; yet we know, intellectually, that all subject matter is essentially a unit. Pupils do not realize this; therefore, as Dr. Neilson says: "They continue to go to college without having a long view of mathematics." It is not surprising, then, that the logical demand has arisen that mathematics be restored to human experience where it originated; that artificial barriers between history, literature, and the arts be obliterated. Human experience is never single but multiple. If our pupils fail to see subjects in relation to life, the chances are they will miss absolutely their chief significance. On the other hand, we have yet no reliable evidence that mathematics taught in relation to science, or composition in relation to history, has a larger functional value than when these things are taught separately. Our reasoning tells us it ought to be so, but evidence is lacking. If greater interest and application result, that fact alone makes our "hunches" have some reliability. The point is, however, that the form of our programs, apart from their motivating spirit, will not insure any genuine progress in secondary education. Integration, whether in the printed curriculum or in the pupil's mind, or in the co-operation of teachers, may be a profound educational principle or it may be just another bit of educational jargon.

We need much more experimentation and better practices in this field.

The present trend toward correlated courses and co-operative teaching, however, is on the whole, I believe, a promising development. Properly safeguarded experiments in this field, I am convinced from our own experience, need not be costly for the pupil. At any rate, with every change, we need to ask ourselves whether we are organizing our courses for greater concentration of effort, for greater mastery and meaning, and not merely adding another hue to Joseph's variegated costume.

I suspect then that much of the effort of the thirty schools during the past three years has been expended not so much in using their freedom to experiment as in seeking guidance for better teaching.

What are these standards for evaluating better teaching?

1. A formulation of objectives so definite, so adequate, and directive that the daily procedure of the school is profoundly affected by them.
2. A respect for skills of expression and processes of thinking that will cause the staff as a whole to strive for maximum efficiency in their use. Such skills as reading, writing, and discussion; such processes of thinking as demand a background of facts with which to attack the solution of problems.
3. A continuous study of the whole program of the school that will insure balance as to the exact and inexact types of experience; the personal and the impersonal; the imaginative and the factual; the manual and the mental.
4. The acceptance by the staff of the idea of essential unity of subject matter, so that by fusion of courses, reorganization of materials within courses, correlation of reading, or by co-operation of teachers in a variety of other ways, learning may become deeply significant.
5. Provision for the needs of the individuals within a group, in such a manner that the special abilities of each may be realized and his maximum growth stimulated. Such provision for individual needs must include not only a wise choice of courses, but a proper differentiation of materials and methods.
6. A continuous utilization of the resources of the com-

munity, student government, the assembly, the library, and home and school relationships, in such a way that education may have the largest immediate functional value in the daily living of pupils.

7. The discovery and application of new types of evaluation that will extend our present wooden instruments of measurement such as examinations and standard tests to the larger and more basic areas of principles, relationships, interests, attitudes, and responsibilities, so that we may have more and better kinds of evidence as to the attainment of our objectives.

In brief, this quest for better practices instead of more exciting programs comes back to the motivating spirit behind all teaching and administration. This motivating spirit is not merely a rosy-hued school spirit, but a co-operative attack by a faculty, possessing wisdom, zeal, and insight, on the problems of the secondary school,—problems which they are prepared to attack because they have applied to them the same critical thinking and capacity for action which they hope to inspire in their pupils.

BURTON P. FOWLER,
*Headmaster, Tower Hill School*

# The Problem of the English Examination

THERE is a genuine and immediate need for valid tests of writing. The paramount importance of the ability to express oneself in writing needs no proof here. It is strikingly attested by the amount of time devoted to the subject at the elementary, secondary, and even higher levels of education. Because this ability is subjected to so many and varied practical applications with results which are frequently unsatisfactory, it is commonplace to criticize the schools for their failure to teach pupils to write. The schools have no satisfactory reply to this indictment because no adequate tests are available to show just what the condition really is. The solution of many problems in teaching, selection, classification, and certification awaits the development of a good test of writing. The complex problem of devising and grading valid examinations in this field has not been solved. Two types of tests are at present widely used, neither of which, in its present stage of development, is satisfactory. The objective test is unsatisfactory because it restricts itself in general to certain mechanical features. The essay test is unsatisfactory because no methods have yet been put into practice for evaluating the writing in a meaningful way.

The tests which can be scored with complete objectivity have long been extolled by those of us interested in measurement. In fact, some of our enthusiastic statements about objective tests have exaggerated their attainments on the one hand, and over-simplified the examining situation on the other. Today we find wide acceptance of the objective forms and a growing realization of their possibilities for measuring more than mere possession of elementary facts. Volunteers now step from the ranks of the teachers themselves to defend objective tests. Furthermore, we find excellently constructed objective tests being made and used by many teachers. Those of us interested in the technical side of examination procedures are delighted at these results.

We must pause for reflection, however, when an English teacher states, as a professor of English does in a recent publication, that, in measuring a student's ability to write, objective tests dealing with the "essentials of English" were used to the exclusion of any actual writing by the student, because it was felt that any test requiring writing would be invalidated by the lack of complete objectivity in the reading of the papers. The professor, appreciating, no doubt, what the reaction of her colleagues would be, states explicitly and without humor that "to amass an array of statistics was *not* the aim."

A French test requiring no French; a typewriting test with no typing; a mathematics test with no problem to solve; and an English test without writing! The notion is striking. Such tests are possible, however fantastic they sound. The form of a test, it has been said, gives no indication of the ability being tested. Indirect indices may be found which relate to the ability in question and which may be used as a measure of it. Indeed, it is reported in the literature that one school even used a test in mathematics to assign students to sections in English and that this test was found to work about as well as the English test. This is a case where a test containing nothing even remotely related to writing was used, with some success, as a substitute for a test of the ability to write.

Little skill and knowledge are necessary to make a test for English which will be better than a mathematics test. Almost anyone who has a knowledge of the common objective test forms, and has access to the composition handbook used in his locality, can throw together such an objective test in the mechanics of English. The size of the handbook is the only factor which will limit the number of sections the tests will have. Sentence structure, diction, punctuation, grammar, and idiom are common ones. If one is equiped with a dictionary, a vocabulary and spelling test may be added. To round off the test, a volume on the history of literature with a thorough

index is needed. A series of questions dealing with who said what, or wrote what, or was born when, and the like, will constitute a test which measures the student's present knowledge of some facts of equivocal significance about literature. The battery is then subjected to the scrutiny of a teacher or two and the most offensive items are removed. After giving the test to a few hundred students, an item analysis can be made, utilizing any one of the popular techniques. The test resulting from the revision based on the analysis will take its place in the first ranks of English placement tests. It will yield a total score of questionable meaning which will be reasonably stable or reliable. Because of the high relationship usually found among desirable intellectual abilities, it will yield a modest correlation with the usual criterion measures, even as the mathematics test did. It will enjoy a wide use, particularly if norms have been collected to enable the teacher to compare her students with other populations.

The astute and outspoken teacher of English protests, with some justification, that this test is not a true measure of the *ability to write*. Were he more versed in the technique of measurement, he might object further by raising many an embarrassing question. What is the relationship between the spelling test used and a student's ability to spell as measured by his accuracy in free writing? How authoritative is the handbook? What is the relationship between the student's knowledge of form and his ability to apply this knowledge? Do the inter-relationships among the scores on the various sections of the test suggest that these sections are all measuring the same ability? Is the test composed of items from a homogeneous universe? How well does the test relate to other tests constructed in a somewhat similar fashion? How does it relate to subjective tests? Do persons who are said to write with clarity and accuracy score higher than those who are said to write incompetently? The answers to some of these questions are as dependent upon further analysis by the English teacher as they are upon fur-

ther experimentation by the technician. The point is, they cannot be answered today.

The skeptical teacher may press further, saying that, regardless of how good a measure this so-called "scientifically" constructed test may be, it has an unfortunate effect on the curriculum. The student wishes to study the things on which he will be tested. He wants to study them in such a way that the relationship to the test situation is obvious. If no writing is called for on the test, then no writing should be called for in the classroom. The reply to this argument given by those of us who have defended objective tests in English is both long and involved. It does not, however, answer the teacher in terms he can apply to his immediate situation. The teacher has a point. Fruitful theory may result from considering teaching and measurement as completely separable and independent functions. But practically tests do have a direct bearing on the curriculum. The English test which has a bad influence on the teaching of English is not a good test. The didactic and measurement processes are not completely separable in the educational situation. There is no need to pretend that they are.

Many of the existing objective tests in English have been built after the fashion just described. Some of the steps may have been omitted or elaborated. Naturally, the results are not satisfactory. The present objective tests in English do not yield indices which are descriptive of the ability of an individual to write. They do have certain values beyond question, but the results must be interpreted with caution. At the present time objective tests in English are of most value when they are used in conjunction with other types of tests.

* * *

While the test technicians and teachers interested in examinations as measuring devices have been working on objective forms for English examinations, what has been done to improve the essay examinations? The history here is sad

to relate. More by default than by design, the essay test has fallen to the care of a conservative group of teachers interested in examinations as definitions of goals. They have been completely satisfied with the traditional essay forms and have, consequently, made little change. The efforts that have been made to improve essay examinations have dealt with the reading of the examinations, and they have been made by the technicians.

Let us consider the familiar type of essay question which has been used for years to test a student's ability to express himself: "Write a composition of about so many words on one of the following topics." The topics range from simple descriptions, such as *A Night Sky, A Rocky Pool, Under Forest Leaves, Silence, Traffic, Bridges,* to such topics as *On Rejecting Advice, On Shifting One's Mental Gears, The Values of Athletics, Is Youth Today Irresponsible?, Nature Has Her Moods,* and so on *ad nauseam.* Such a question has the advantage of requiring little thought or equipment for its construction. Any topics will do, no matter how silly, how incomprehensible, how ill-suited to the student or how far removed from his interests and experience.

Why can this common essay form, as it is now worded and read, never be of value? Why is it a poor device for testing the ability of the student to express himself as well as for teaching him to do so? There are numerous reasons, and it may be well to list some of them.

The objective of composition courses at the high school level is, I assume, to aid the student to express himself clearly and accurately within the range of his interests and abilities. The typical assignment, on the other hand, seems to presuppose that the primary purpose of composition courses is to teach the student to write charming nonsense about something in which he has no interest, or to force him to imitate an eighteenth-century model which he neither understands nor appreciates. The artificial writing called for by the usual theme is as unrelated to the type of writing the student will

be required to do outside the composition classroom as is the worst type of objective material!

Another weakness of the traditional essay is the inadequate definition in the instructions of what the student is to do. What is the purpose of his writing? To what audience is he to address his remarks? A British critic of the composition examination suggests that the implied directions to the student for writing an essay are: Write anything about any one of these topics for anybody. The mere directions to write "anything for anybody" are not sufficient.

Still another reason why the traditional essay question gives unsatisfactory results is the fact that it is rarely read with a reliability of over .60—that is, two readers cannot agree on the quality of a paper. Reliability of reading can be improved and must be improved to the point where coefficients of .90 are the rule, but in so doing the baby must not be thrown out with the bath. Just as any subject matter can be forced into ill-suited objective forms, so can any essay be read with a high degree of consistency by enforcing arbitrary and quite artificial standards, which may be only remotely related to the ability to write, and which will destroy any possible validity of the exercise. The reliability must not be gained at the expense of the validity. The judgments of the readers must be based on the important qualities and characteristics of the writing. For example, two readers would doubtless agree much more closely than they now do on the grade of a theme if the grade were based solely on the number of errors in spelling and punctuation, but the grade would certainly not represent completely the student's ability to write. An even closer agreement, and a more meaningless index, can be obtained by basing the grade on the number of words written.

There are several explanations for the lamentable inconsistency in the reading of themes of the usual sort. For one thing, competent masters in English do not agree as to what constitutes a good theme. To some, the essential ingredients

are one combination of qualities; to others, another. Each reader has his own ideas, and, since no explicit statement is made as to what the themes are to be read for, individual standards rule. One reader may stress mechanical perfection in writing. Another is interested more in the ideas expressed by the candidate. Some readers have even used grades as a disciplinary device. An excellent paper is given a modest grade in the hope that the lower grade will prove a stimulus to greater activity or will lessen conceit or in some way make the candidate a better person. One reader bases his grade on the quality of the reasoning shown; another tries to judge the intelligence of the writer and assigns his grade accordingly. Many other qualities may affect the grade. What is the originality shown by this paper? What is the sophistication of the writer, his liberality, cynicism, verbal fluency, skill in diction, the size of his active vocabulary, his style, his organizing power? Does he conform to the traditional essay pattern? Does he display some acquaintance with a literary background? Even the quality of the handwriting, although it is not recognized as a determining factor, is too frequently one of the important criteria. In brief, the theme constitutes such a variety of elements that any reader should be pardoned for not finding in it just the pattern which another reader does. Is it any wonder that the reader forgets that the theme is being used as a test of the student's ability to write plain, unadorned prose, expressive of his ideas, however weak those ideas may be?

These criteria of judgment vary not only from reader to reader, but also with the same reader from day to day. A *C* paper may be graded *B* if it is read after an illiterate theme, but if it follows an A+ paper, if such can be found, it seems to be of *D* caliber. The influence of the reader's physical condition on his grades should also be mentioned, although it has been frequently and uncritically stressed by the opponents of the essay test.

Another explanation of the widespread unreliability of

reading is that the typical English reader has the feeling that to grade an essay A or A+ is virtually to elect the candidate to the American Academy of Arts and Literature. One reader told me with seriousness that he doubted if any of his colleagues on the English faculty could, under test conditions, write a theme of B quality or better. He was not condemning his colleagues; he was indicating what he meant by a B paper. Recently, in reading 7,000 essays, the readers used an eight-point scale. The papers given the top four grades constituted less than 20 per cent of the group. The highest grade, A+, was given to only three of the 7,000 papers. Through condensing the grading scale and holding up ridiculous individual absolute standards, the reading was made even more unreliable.

The traditional use of optional topics further complicates, in an indeterminate fashion, an already bad situation. This fact cannot be pointed out too often. A recent study of the grades awarded optional topics showed that 38 per cent of the students who wrote on option *a* were given high grades by the readers, whereas only 8 per cent of those who chose topic *b* were given similar grades. Why did this discrepency occur? Perhaps it was because good students chose topic *a*. Perhaps it was because the readers graded topic *b* more stringently. Perhaps one topic is intrinsically more difficult than the other. A dozen more "perhapses" may be added; the truth of the matter is that no one knows or can find out what happened. The student, of course, suffers because his grade does not represent his ability.

The student, because of all these difficulties, cannot be expected to write themes of a given quality with any consistency—and he doesn't. If he has the luck to secure a high grade on a topic given today, he may receive a low grade on one assigned tomorrow. There are many reasons why this variation occurs. It is partly due to the unreliability of reading. His inspiration may vary. A carefully worked out paper, sometimes called a "canned" theme, is not so easily

adapted to a topic from the first list as to one from the second. Perhaps he stumbles into and handles badly a tricky grammatical construction in the one paper and not in the other. In order to rule out this source of error caused by the inconsistency of the student, he should be required to write about ten to twenty different themes of the present variety if a representative grade on *theme writing* is to be reasonably certain. In general, it is not practicable to secure a sample of this size under test conditions. Even if it were, the cost of reading the papers would be prohibitive.

The traditional essay test is thus seen to be as unsatisfactory in its way as is the modern objective test in its. The problem which faces the English teacher and the test technician is to devise exercises of one sort or another which demand actual writing by the student and to devise means of grading these exercises with great consistency, and still make them yield a meaningful index of skill in plain expository writing. In so far as skill in writing involves knowledge of a certain amount of material which can be easily tested by objective measures, the test should contain objective sections. The unwillingness of some English teachers to admit any objective material into their examinations is as detrimental to the development of valid English tests as is the unwillingness of the opposing camp to experiment with questions demanding evaluation by competent readers. The valid test will contain both types of questions.

The initial step in the procedure of constructing this improved examination is a difficult one. The whole process of writing must be subjected to a thorough and critical analysis by the best minds concerned with and experienced in the skill. Certain fundamental principles of writing will emerge. A valid content or subject matter will thus grow up about writing, and provide the English instructors with a rational basis for instruction. Then, competent masters of English will be able to define the criteria of good writing in meaningful language and to recognize various degrees of attainment.

This task is such a difficult one that only an incomplete solution can be expected. The distinction between the objective of "literary" writing and what may be called the practical type of writing will undoubtedly have to be understood. English teachers will have to admit that their task at the pre-college level is to teach students to express themselves accurately and precisely, rather than to cultivate budding literary geniuses. Having made this admission, they must adjust their procedures to fit their objectives. The colleges wish tests which will differentiate those students who are able to express themselves in writing with reasonable clarity and accuracy from those who cannot, regardless of what they are writing about. Precisely what is meant by clarity and accuracy must be worked out. It need bear little relationship to the ability to write an essay about *Grass, The River, Over the Hills and Far Away,* or *Disadvantages of Growing Up.*

A statement and analysis of the abilities demanded in clear expository writing will give clews to what we must measure. Then, rather than trying to devise an exercise to measure all of these qualities at once, we shall have to try to measure them separately. The exercises will be short, for the test must secure enough samples of the student's writing to constitute a dependable measure.

The proposed exercises should be carefully tested by giving them to groups of students and having the products read. The statement of the problem and the instructions to the student will then be revised as a result of the pre-testing of the exercise. The vague terms of the present questions must be changed for careful and precise wording. At present, the readers, like the students, debate about what the examiner meant. Regardless of who composes the directions, their clarity and precision must be established through pre-testing. Readers will have to indicate necessary changes in the exercises to make good reading possible, for readers must be able to agree on the worth of a paper before the exercise is acceptable.

Probably such concepts as originality, style, and inspiration will not be useful in reading the papers. What is wanted is a measure of the student's *dependable habits of writing.* To what extent does he have a *permanent, established skill*—a skill that will operate to the same degree today, tomorrow, or next week, the same in the morning as in the afternoon? The examination questions should not be formulated to inspire the student. His inspired creative genius is *not* to be tested; rather, his consistent underlying ability is to be given a chance to display its power.

* * *

Passing from the generalized formula to an imperfect illustration or two is dangerous. It is desirable, none the less, to give definite hints of possible approaches. The following exercises, which must be judged in comparison with existing English tests, have been developed in part by experts in teaching English and in part by technicians as illustrative material for the English masters to bend to their uses.

Such knowledge of grammar and general mechanics as is necessary can be tested objectively. It should be tested. The assumption that grammatical weaknesses will show themselves in the student's free writing is not a safe one. The student should be pushed into certain situations rather than be allowed to wander around aimlessly in the hope that he will stumble into them by chance. Objective exercises which cover points in mechanics take little time and demand that the candidate react to many situations. One form of testing certain of the mechanics of English which is not completely objective is a so-called *construction shift* test, in which the student is given a sentence and told to make a specified shift in it, together with all other changes made necessary by the directed change. The student, in going over a written paper, frequently has to follow a similar procedure. This *construction shift* form is quite flexible. It may be used to determine whether a student knows how to subordinate and co-ordinate ideas, to shift emphasis, to change from active to passive voice, to vary tenses,

as well as to test a knowledge of basic grammar and sentence structure. This test is not objective, but has been read with a reliability of .98. It makes possible the testing of a great many points in a short time. It has the advantage that the student cannot, as in free writing, avoid the issue.

Another very short type of exercise is one in which the student is directed to reduce given sentences of a verbose nature to as few words as possible without the sacrifice of any of the essential ideas. The implication of this exercise is not that all writing should be stripped to bare essentials. Verbosity in general, however, is obnoxious, and in this exercise the student is to reduce wordiness to a minimum, to show that he knows what ideas are essential, and how they may be tersely expressed. Think of how few words are necessary to express the essential ideas contained in a paragraph taken at random from a political speech. These exercises, even when made apparently obvious, are difficult for the students. Readers can, with a little training, read the answers with great consistency.

Expository paragraphs may be presented for rewriting. A series of correctly ordered, short, choppy sentences may be presented to the student, with instructions to introduce smoothness in the paragraph without changing the organization or the ideas. The student, in rewriting the paragraph, can show his ability to compose correct sentences, to subordinate and co-ordinate ideas, and to introduce variety of sentence structure.

A series of long, elaborately constructed, but not verbose, sentences may be presented for the student to rewrite. Another possibility is to present a paragraph containing sentences of exactly the same length and the same construction for the student to rewrite.

All these exercises can be, and have been, read with high consistency. They may be further extended by having the student first criticize the passage and then rewrite it. His criticism may be graded for both content and form.

The improved examination will not discard exercises calling for a freer type of writing, although explicit directions will be given to the student as to what he is to do. Possibly some control of the content of the writing will also have to be made.

Furthermore, the student should not be given a choice of doing either this task or that. True, the student feels that he could do better writing on another exercise, or even on another day, but the test is to see what he can do on this particular topic at this particular time. If he has a *permanent skill* in writing, he need but use it. The exercise will not be the emotional experience that writing about *The Brook* would be, but it yields a better index of the student's ability, because it restricts him more by ruling out inspiration, liberality, and other confusing side issues. In so far as possible, the student should have an obvious purpose in writing. He should write to say something, not to use 350 words without making an error. He should be just as intent on getting the reader to understand his meaning as he is in the history examination. He should concentrate on what he is saying, relying on his established habits of writing to supply the framework.

The writing exercises must be read in a more efficient way than they are customarily read. Letter grades, with their absolute literary significance, should not be used. A single piece of writing should be evaluated on the basis of several criteria which are adjudged by competent teachers as significant. For example, a paper could be assigned one grade for the quality of its organization, a second grade for coherence, a third for mechanical perfection, and so on. These categories are merely suggestive; others could be added or substituted by the experts who determine what the significant characteristics of good writing are. The final grade of the paper would be the sum of these part scores. Furthermore, a specific grade on any one category would represent a clearly defined type of paper. If organization were one of the factors to be evaluated, for example, the readers would agree that a paper organized in any one of several equally good ways

would receive the top score on organization. A paper which departed slightly, in specified ways, from these acceptable methods would be graded less, and so on through the range of scores. The reliability of the reading carried out on this basis must be, and is, high. Schemes of this nature have been used with success, and reliabilities as high as .95 have resulted, without, according to the testimony of the readers, a sacrifice in validity.

* * *

The problem of the English examination is to develop exercises which call for actual writing and which demand an adequate sample of the *permanent writing skill* of the candidate. The exercises must deal with the important and vital aspects of writing. They must tap the candidate's *regular habits of expression.* The solution of this complex and baffling problem awaits the co-operative efforts of the test technicians and the English teachers. The English masters must define and delimit their field. The technican must aid through suggesting procedures which will yield stable results containing as small an error as possible, and which at the same time satisfy the masters. The problem is a large one, but already some signs of a serious concerted attack on it are to be noticed.

JOHN M. STALNAKER,
*Research Associate,*
*Princeton University*

# The Program of the American Council on Education

I HAVE been invited to speak on this occasion about the program of the American Council on Education. Such would seem to be a relatively easy assignment, but in preparing this statement I have not found it such. This is not said in any sense to alibi for what may be presented, but rather as an introduction to the discussion of a program which has unusual aspects. During recent months particularly it has been borne in upon me that it is impossible to describe the program of the American Council on Education as one usually can describe the programs of other educational organizations.

Some light is shed on the Council's undertakings by a knowledge of its origin. Established in 1918, during the World War, it came as an outgrowth of a meeting of prominent educators representing various national educational associations, held to discuss the question of what possible contribution the schools and colleges could make in the national crisis that confronted our country.

Then called the Emergency Council on Education, its first stated objectives were:

1. To place the nation's educational resources more completely at the service of the national government.
2. To obtain a continuous supply of educated men. (This of course in the face of the demands of war which above anything else consumed manhood power in military assignments.)
3. To meet more effectively the educational problems arising during and following the World War.

The Emergency Council was composed of representatives of the following national educational associations:

American Association of University Professors
Association of American Agricultural Colleges and Experiment Stations
Association of American Colleges
Association of American Law Schools

Association of American Medical Schools
Association of American Universities
Association of Collegiate Alumnae
Association of Urban Universities
Catholic Educational Association
National Association of State Universities
National Council of Normal School Presidents and Principals.
National Education Association
National Education Association—Department of Superintendence
National Research Council
Society for the Promotion of Engineering Education.

The usefulness of the Council in its initial days is attested by the following activities, all of which were contemporaneous with our participation in the great war:

The President of the United States asked the Council's assistance in the nation-wide campaign in behalf of American education.

The Surgeon General of the United States Army used the Council's machinery in enlisting 10,000 young women for preliminary nursing training.

The Council of National Defense asked the Emergency Council on Education to take official charge of the British Educational Mission when the latter visited this country.

The federal government urged the Council to assist in developing closer relations with French and Spanish educators.

After operating a little less than a year, the name was changed from Emergency Council on Education to that of American Council on Education. This was done because of the recognized need for large co-operative efforts educationally within the nation in time of peace as well as of war, and to establish an agency that would develop better relations with educational institutions abroad.

At the same time that the name was changed the basis of membership was broadened so as to provide in the roster for approved colleges, universities, and technological schools. There was added also a new group called associate members,

the latter being organizations of related interests, such for example as the American Alumni Council, the American-Scandinavian Foundation, the National Research Council, the United Chapters of Phi Beta Kappa, and about two score other similar organizations.

Again in October, 1935, in order that the Council might include representatives of the entire American educational system, as we call it, membership was opened to state departments of education and to city school systems serving populations of 200,000 or more. During the fiscal year closing April 30, 1936, the membership of the American Council was enlarged by 103 educational institutions and organizations, an increase of 38 per cent. The present membership list includes:

| | |
|---|---|
| Constituent Members | 29 |
| Associate Members | 28 |
| Institutional Members | 326 |

At the inception of the Council, as we have seen, the program was distinctly one sicklied o'er with the consciousness of war. Since that time the number of activities which have been included have increased year by year, and the scope of educational interests covered has constantly widened. In order to give you some idea of the range that is now included, as well as the character of the projects, may I enumerate some in which the Council is now engaged as well as refer to others that have been completed.

*The American Youth Commission,* begun in 1935, is a study to be extended over a five-year period. It is subsidized by a grant of $500,000 from the General Education Board, has its own group of directors, the head of which is Mr. Newton D. Baker, and is directed by Dr. Homer P. Rainey.

Adolescence under present economic, social, and political conditions is without doubt the most crucial problem in American life. The increased age of productive employment, coupled with inadequate educational and recreational opportunities, aided and abetted by the vanishing economic frontier,

has created crucial problems for youth in this country which have already manifested themselves in alarming ways and which are even more gravely portentous for the future. The problems are so complex that only by careful study of the underlying causes and their interrelations can we hope to avert tragedy for thousands of our young people, and danger to our national existence. It is both timely and appropriate that an agency such as the American Council should undertake a comprehensive study of a problem at once so large and so menacing to the foundations of American civilization. Without question this is one of the most important projects which the Council has yet undertaken.

*The Financial Advisory Service,* begun in 1935, is carried on under the general supervision of Lloyd Morey, comptroller of the University of Illinois. Its facilities are available to all colleges, universities, and other educational agencies in the United States.

*Motion Pictures in Education* was established in 1935. The motion picture is one of the most powerful educational devices that has ever been invented by the human mind. Within a decade or so motion pictures, mainly made by commercial interests for theatrical exhibition, have usurped large and important areas of education formerly divided between the home, the church, and the school and library. "Movie-made children" is a popular phrase which carries more than enough truth to alarm even the most complacent educators. Much of the influence of the movies has been good, but much of it has been bad. The problem of increasing the good influences of the movie, and of exploiting its almost incalculable educational resources, requires a great deal more than identifying and eliminating its bad features. An exploratory study, such as this committee is making, with emphasis on the constructive side as opposed to negative criticism, will lay the foundation for genuine advance in using the enormous educational potentialities of the motion picture.

*The Modern Foreign Language Study* has been progres-

sively developed over a long period by a committee under the chairmanship of Professor Robert H. Fife. It is an investigation of the technics and methods of teaching foreign languages, and seventeen volumes have already been published and distributed under its supervision. A recent additional grant to this committee makes possible the continuance of its work.

*The Educational Finance Inquiry* is a report of fifteen volumes in which are set forth scientific methods of financing public education. It was made under the direction of Dr. George D. Strayer. To augument this study the Council recently published the report of the National Survey of Finance, which was directed by Dr. Paul R. Mort.

*The Committee on Materials of Instruction* under the direction of Dr. Charles H. Judd has produced a series of six monographs relating to the social studies of elementary and high schools.

*The Committee on Personnel Methods* has been very active for over ten years. The fundamental objectives of this committee has been to devise ways and means to enable schools and colleges to ascertain and meet the needs,—educational, personal, and social,—of individual pupils, whatever the needs happen to be. This is the ideal of educational guidance and the purpose of personnel administration. Since many of the most serious problem cases are caused by undetected and uncorrected academic maladjustments, the committee early emphasized the need and feasibility of providing and using curricular achievement tests. If the tests produced by the Co-operative Test Service are used as they should be used, we should no longer find pupils in college struggling vainly with a collegiate curriculum while their vocabulary is still below the 9th grade and their reading skills below the 7th grade levels. Such situations, which are now too frequent, are wasteful, and lead to many frustrations and serious educational disturbances. Here we are concerned with one of the major sectors of the youth problem, one in which the schools

and colleges can make their greatest contribution to the most crucial of all national problems. This committee is primarily responsible for initiating the recent volume on "Construction and Use of Achievement Examinations," prepared under the authorship of Dean Herbert E. Hawks, Professor E. F. Lindquist, and Dr. C. R. Mann. Quoting from its introductory pages:

This volume is an attempt to bring to the attention of teachers and administrators, so far as can be done in so narrow a compass, a survey of the principles that lie at the basis of any system of examination making that deserves the name, and to describe in some detail sound methods of test making in the various subject matter fields.

* * *

The volume is aimed particularly at the needs of the classroom teacher in schools and in the first two years of college. It is hoped that it will serve not only to assist the teacher in the actual process of producing examinations that will accomplish their purpose better than would otherwise be the case, but also to ground him in the type of objective results and principles that lie at the basis of examination making.

As you doubtless all know, the Committee on Personnel Methods has always worked in close co-operation with the Educational Records Bureau, which is the organization mainly responsible for inaugurating the series of fruitful conferences, of which the present one is the fifth.

Other active committees of the Council are:

Committee to Co-operate with the Education and Law Conference, Dr. C. R. Mann, Chairman

Government and Educational Finance, Dr. John K. Norton, Chairman

Government and Educational Organization, Dr. A. B. Meredith, Chairman

International Aspects of Education, Dr. I. L. Kandell, International Institute of Education, Chairman

National Legislation, President Cloyd H. Marvin, Chairman

Relation of Emotions to the Educative Process, Dr. D. A. Prescott, Chairman

Committee on Standards, President Raymond Walters, Chairman

Advisory Committee to National Resources Committee, President E. C. Elliott, Chairman

The *Committee on Measurement and Guidance* is, however, the one whose work is probably most widely known. As organized at present, its function includes those of two former committees, one on Measurement and Testing and the one already mentioned on Personnel. Thus, both the Co-operative Test Service and the Educational Records Bureau have interests at stake here. The present committee is also sponsoring the use and further development of the American Council Psychological Tests, prepared by Professor and Mrs. L. L. Thurstone, for high school seniors and college freshmen. These have been given to nearly two million individuals since this part of the program began.

As an agency devoted to scientific inquiry, to the provision of machinery for consultation, and to the stimulation of experimental activity in education, the Council, since its inception, has been concerned with problems of measurement and evaluation, and has attempted to assist in the development of tools for use in this field. As a result there have been not only the psychological tests and those developed under the Co-operative Test Service, but also those prepared by the Committee on Modern Foreign Languages. The Committee on Personnel Procedures which was established in 1925 has been directly interested in scientific measurement and individual guidance. The cumulative record cards and personality rating scales were basic developments in this area. The Co-operative Test Service, under the direction of Dr. Ben D. Wood, has been the most extensive organization which the Council has sponsored in this entire field.

In October, 1935, the Council set up a special *Committee on Review of the Testing Movement.* The committee was

requested to consider and report on the validity of the co-operative testing service in the light of the present developments in the testing movement, its relation to other testing enterprises now in operation, and in general the place and function of measurement and evaluation in the educative process. The committee so set up reported back to the Council on April 29, 1936, recommending that there be established a Commission on Examinations and Guidance, to include the functions which for five years had been carried on by the Co-operative Test Service. It also recommended that research and experimentation should be carried on in relatively new or inadequately covered parts of the field, such as the evaluation of personality, aptitudes and attitudes, and mental and emotional traits.

The new Committee on Measurement and Guidance has been asked to carry on certain phases of personnel work, and is continuing the program of the Co-operative Test Service. In connection with the latter, the tests and assistance formerly available will be still accessible to those schools and colleges wishing them. In addition there are contemplated a limited number of concentrated state-wide testing programs to be assisted by this committee but conducted under the authority of appropriate state educational agencies.

In the September 16 issue of the Ohio State University *Educational Research Bulletin,* your own well-known colleague, Dr. Ralph W. Tyler, discusses "Needed Research in the Field of Tests and Examinations." He says that,

> Nowhere to my knowledge has there been a systematic attempt to list all of the kinds of behavior important for educational purposes. . . . Few attempts have been made to formulate a comprehensive list of objectives for the entire school. . . . Research concerned with identifying the types of behavior to be appraised needs to deal with a second aspect of the problem—the classification of behavior into types and the degree of specificity to be sought. Research is greatly needed in devising means for appraising each important type of behavior.

The committee of the American Council on Education, which was appointed one year ago and reported last April, was unanimous in the expression that among the matters with which the Council should concern itself in its program of testing and measurement should be the very features which are pointed out by Dr. Tyler in the references just made. The organization recently set up by the Council, and still to be expanded, has definitely in mind the attempt to make some progress in this very direction.

But the committee which has the most determining power concerning the Council's program is the *Problems and Plans Committee.* Its chairman is Chancellor S. P. Capen. Other members are:

President E. C. Elliott
Dean H. W. Holmes
Mr. John H. McCracken
Dr. C. R. Mann
Professor Mark A. May
Professor Paul R. Mort
Principal Eugene R. Smith
Dr. Payson Smith
Superintendent Paul C. Stetson
Dean George D. Stoddard
Commissioner J. W. Studebaker

Although all proposed projects must be approved by the Executive Committee before they can become part of the Council's program, nevertheless it is in the Problems and Plans Committee that the most important decisions are made. The committee meets four times a year, devoting usually two days at each meeting to deliberation. Here really is where the fundamental policies of the Council as well as the major features of its program are determined. What projects fall within the proper range of the Council's function? Of those appropriate for the Council's action, which are most needy, which most feasible of solution? What are the proper methods to be pursued in carrying out the cam-

paign? Where are the probable sources of necessary financial support? These are among the far-reaching questions considered by the Committee on Problems and Plans. The very name of the committee is significantly suggestive of what it does.

So far I have told you of some things which the Council has done or is doing. May I turn next to what the Council is contemplating doing. Here, of course, is where the Problems and Plans Committee stands out in bold relief. The ramifications of this committee's considerations are expansive and divergent. This fact is illustrated by the names of the subcommittees that are actively engaged in their several fields of operation at present. These subcommittees are:

Academic Freedom and Social Responsibility
Co-operation among Institutions of Higher Education
Occupational Training and Vocational Adjustment
Place of Radio in Organized Education
Research Fellowships and Grants-in-Aid of Research in Education
Study of Business Education
Study of the Master's Degree
Teacher Training Problems

To fill in the outline of the American Council's program one other activity must be mentioned. It is that of publications. There are two that stand out above the others in respect to continuity. First is *The Educational Record,* the official organ of the Council, which has appeared quarterly since January, 1920. The other is the handbook, *American Universities and Colleges.* It was published first in 1928, revised in 1932, and revised again in 1936. It contains detailed information concerning American institutions of higher education on the several accredited lists, as well as statements of general developments in education. The only volume of its kind covering American institutions, it has come to be a standard book of reference not only in this country but also abroad.

Other publications are the *Construction and Use of Achievement Tests* which has been previously mentioned, the *Educational Finance Inquiry,* the *Study of Graduate Schools,* and the series entitled *Materials of Instruction.* So important has this activity become that the Executive Committee at its meeting a few days ago adopted the recommendation of President Zook and provided for the appointment of members of the present staff, one as editor and one as assistant editor, and for an editorial committee of the Council.

I hope that this factual recital has not bored you. It seemed to be the only means by which I might present to you a reasonably informative as well as an intelligent concept of the program of the American Council on Education. The present statement of the aims of the Council will be much more meaningful with the realistic background which is now before you. This statement is:

The object of the Council shall be to advance American education in any or all of its phases through comprehensive, voluntary, co-operative action on the part of educational associations, organizations, and institutions, and in the fulfillment of that principle to initiate, promote, and carry out such systematic studies, co-operative experiments, conferences, and other similar enterprises as may be required for the public welfare.

With these factual statements in mind and in the light of this statement of aims, a few interpretative remarks may be in order as a final part of this presentation.

If one examines the programs of the various educational organizations in this country, national or sectional, college, university, public schools, professors, administrators, public school teachers,—he will be impressed by one thing. Each of these organizations sets out to accomplish specific purposes. Sometimes it is to increase the membership; sometimes it is to collect the dues; always it is to consider those problems of whatever character that are more or less peculiar to the special group which constitutes the membership of the organization.

One going to an annual meeting of a national or sectional association can with a fair degree of accuracy foretell the scope of the program which he will hear.

I do not wish to be understood as criticising this situation. Such organizations have their places. They accomplish much good. But what about the needs that don't fit into any such program? These are those from which are being selected the projects that become parts of the program of the American Council.

A second characteristic is that it may undertake anything it chooses. Its program is not set. Let me hasten to add that the American Council on Education seeks in all that it undertakes not to duplicate the work of any existing agency. At the same time it can and does cut across the areas, so to speak, of existing educational organization. For example, in connection with teacher training, a phase in which the Council has been more recently engaged, schools are interested from the nursery through graduate training. Again tests and measurements are increasingly becoming the interest of persons engaged in education on all levels.

There is also the field which has been very largely unoccupied, that of international relations in education. While many of us in school work believe, and perhaps even teach, internationalism in civil and political relations, by our practice we have become increasingly nationalistic.

A third characteristic of the program of the American Council of Education is that it undertakes long time projects. Witness the Co-operative Test service, a ten-year project; the work of the Foreign Language Committee, which though not stipulated for any particular period has now extended itself over a number of years; the Youth Commission, which was set up for a five-year period.

Someone will immediately reply that other educational associations are doing this same sort of thing. With such a statement in truthfulness I must agree. But there are at least two differences between such programs carried out in other

educational organizations and those conducted by the American Council. One is that it is not typical of the programs of the other agencies to set up long-term projects; but it is indigenous to the character of the work which the Council has done since its inception. The other difference is that the Council, by reason of its membership as well as the character of its program in general, occupies a peculiar relationship to other educational agencies in respect to its own long-term projects. It may complete these projects, if it wishes to do so, as it has done with several of them. On the other hand, with a greater freedom than any other educational organization it may seek to pass on the administration of a service from itself to some other organization. Witness the Personnel Service Division which was set up and operated as a service for the registration of persons desiring appointment to college teaching positions. When this service was discontinued in 1929, the service to some extent was taken over by the Appointment Service of the American Association of University Professors.

Again the program of the Council is co-operative by the very nature of the organization of the Council itself, and of the predominating type of project falling within the program. As an illustration of this point, may I call your attention to the First National Conference on Educational Broadcasting which is to be held in Washington December 10, 11, and 12. The announcement of this Conference states that it is in co-operation with the United States Office of Education and the Federal Communications Commission. This announcement also carries the names of eighteen different organizations which are sponsoring this Conference. The fact of the matter is that by far the greater part of the work in preparation for this meeting has been done by the vice president of the Council, Dr. C. S. Marsh. The Council is perfectly willing that it shall not be credited with any particular service in the announcements which are circulating concerning this Conference. I mention the event as illustrative of the type of co-operative activity in which the Council engages.

There is another type of co-operation in which the Council has been fortunate and happy. It is in securing the services of persons not in education. You have already been told that Mr. Newton T. Baker is chairman of the American Youth Commission. Mr. Owen D. Young is vice chairman. Less than one hour before coming into this meeting, President Zook succeeded in tentatively enlisting the actual interest of Mr. Walter Lippmann in an activity which the Council anticipates undertaking.

In contemplating or in engaging upon any project the Council sustains a peculiarly independent relation. It does not need to think of how any activity will affect it as an organization. Its primary concern, as is set forth in its statement of aims, is the public welfare. Not claiming for itself any superiority above other organizations, at the same time it strives to exercise an overview of the numerous educational activities, organizations, and fields. It seeks to exercise an influence through causing nation-wide attention to be centered upon certain problems by selecting these items for consideration. In general, it considers it has a right to enter any educational field, not properly occupied, that is within its technical competence.

At the same time the Council does not assist in raising funds for individual institutions or associations. It does not endorse movements, organizations, or drives. It seeks distinctly to shun questions which have any political complication. It refuses to be a middleman between persons who have projects and foundations or other sources of financial support. Its function is to look over the educational field to see what is most in need of being done that is not being done and to search out those problems almost unthought of but which are fundamental to educational progress, then to state these larger problems and set upon their solution.

All of us, I am sure, have faced the question of what educational organizations to join, and the even more pointed one of which to attend. There are so many with which we should

like to continue affiliations because all seem so worth while. But choices must be made.

In the entire list there is no other quite like the American Council on Education. Certainly more than any other and by means that are not employed elsewhere, it is a center of sensitivity to the main movements going on in all the fields of education, and to the major activities under way in these fields. It must maintain this relation in order not to duplicate what is being done by someone else.

To acquaint one's self with the detailed program of the Council serves, therefore, a twofold purpose, and above all tends to give one a perspective of American education which certainly is not excelled, if indeed it is equalled, by any avenue.

RAYMOND A. KENT,
*President, University of Louisville*
*Chairman, American Council on Education*

# Changing Values in Educational Measurement

I SHOULD like, first of all, to express my appreciation for this opportunity to attend and participate in this conference. As some of you may know, we have in Iowa our own version of your Educational Records Bureau program, which we call the Iowa Every-Pupil Testing Program. I am glad to confess that many of what we consider to be the best features of our program have been patterned after or suggested by the excellent organization that you have effected in the Educational Records Bureau. These annual meetings, therefore, represent to me an opportunity to become more intimately acquainted with this organization and to secure from your discussions further ideas which may be taken back to Iowa for the improvement of our own services.

It has been my good fortune to attend all but one of these annual meetings. In all of these meetings I have been particularly impressed by the apparent unanimity with which the members of this conference have adopted a certain point of view concerning educational measurement. This point of view, as nearly as I have been able to sense it, may be expressed in the following three statements:

*First,* that the basic problem of the school is to provide for each boy and girl those learning experiences and opportunities which, in light of general educational aims, are best suited to his or her peculiar interests, needs, and abilities. In other words, that education must be primarily concerned with the individual, in full recognition of the great variety and magnitude of individual differences.

*Second,* that accordingly the first responsibility of the teacher and of the school is to become intimately and reliably acquainted with each pupil, in order that instruction and guidance may be best adapted to his particular requirements—a

responsibility which transcends even that of thorough familiarity with the subject matter taught.

And *third,* that the major purpose of all educational measurement, of standardized tests and testing programs, is to enable the teacher and the guidance official to base this acquaintance upon reliable, objective, and comparable information as free as possible from the usual errors and biases of subjective opinion. Or, in other words, that the major values of educational tests are their values in educational guidance and in the adaptation of instruction to individual pupil needs.

I hope I have made no mistake in this interpretation of your own ideas, since, without making any attempt to defend this point of view as such, I shall concern myself with certain of its practical implications for the use and interpretation of test results in the school situation.

From this point of view, one of the most significant developments in educational measurement in recent years has been the rapid growth of state and regional co-operative testing agencies, such as the Educational Records Bureau and the Co-operative Test Service. The significance of this development lies in the fact that these agencies have made possible, for the first time, the really effective use of test results in educational guidance and in the specific adaptation of instruction to the needs, interests, and abilities of the individual pupil. Let us consider first the basis of this contention, particularly with reference to the problems of instruction and guidance at the high school level.

Just prior to the appearance of these agencies, say in the late 1920's, there were available for use in the secondary school some 500 published standardized tests of educational achievement. While these included a few tests of excellent technical quality, as judged by existing standards, the great majority of them were hastily constructed, inadequately standardized, and full of technical imperfections—a situation perhaps partly accounted for by the excessive commercialism which up to that time had characterized the production and

distribution of standardized tests. Because these tests were only very rarely accompanied by any adequate or trustworthy evidence of their relative validity, and because there were no criteria of validity that could be readily applied by anyone not technically trained, the ordinary test user was unable to make any intelligent selection from this bewildering mass of test materials. Even if he had been able to select and use the best of available tests in each field, it would still have been impossible for him to combine the measures derived from them into any meaningful description of the individual pupil for use in educational guidance. The effective use of test results in guidance depends, above all, upon high comparability among the various measures obtained, a characteristic which at that time was conspicuous only by reason of its absence. With very few exceptions, the tests were constructed independently of one another, by different persons, at different times, and in different places, with no view to their possible uses in combination in an integrated program. The norms for the tests were similarly independently established, each for a different group of schools, at a different time, and under different conditions; often they even differed in kind. Only very vague descriptions, if any at all, were provided of the types of schools used in establishing these norms or of their geographical distribution, while the numbers of cases employed were in most instances insufficient to make the results reliably representative of the level of achievement in any school organization or in any region. This situation was perhaps inevitable under a system which relied so much upon scattered individual initiative, and to some degree upon the profit motive, for the sporadic and independent production of test materials. I should like to make it clear, however, that this rather severe indictment of earlier testing practices does not contain any implied criticism of the professional integrity of many of the test authors, some of whom were doing the best that they could under prevailing conditions and were very keenly aware of the difficulties which they faced.

It is fairly obvious to us now that the test results thus obtained possessed only very limited possibilities for use in guidance. Very little meaning, for example, could be derived from the knowledge that on one test Johnny Jones ranked above the norm established for one vaguely defined group of schools and pupils, and that on another test he ranked at the norm established for another group, also vaguely defined and perhaps quite dissimilar from the first in geographical location, in types of school organization represented, and in general level of achievement. Such data could hardly be employed for determining reliably the special aptitudes, needs, and accomplishments of the pupil in the various areas of his intellectual development, nor for measuring relative growth in these areas over a given time period. It is not at all surprising, then, that the schools at that time were making little if any effort to maintain cumulative individual records of test results, that little was being "done about" the mass of test data that had been collected, or that the entire testing movement was beginning to suffer from a very definite reaction to its earlier phenomenal growth.

Fortunately, thanks to organizations such as the Educational Records Bureau and the Co-operative Test Service, this confused situation in educational testing no longer exists, except perhaps for those schools that have not yet availed themselves of the services of these or similar agencies. It *is* now possible for schools in almost any part of the country to procure a highly integrated set of tests, collectively capable of describing the intellectual achievement or educational development of the high school pupil in nearly all of its more important aspects, and in terms of measures which are highly comparable from test to test. Before explaining further how this has been accomplished, I should like, if I may, to take time out for a brief discussion of the nature and purposes of test norms.

Test norms, in general, are intended to serve two major purposes. One of these is to facilitate the interpretation of

the scores made on a given test, independently considered. The other is to make possible comparisons between scores on different tests.

To illustrate the first of these purposes, we may note that the statement that Johnny Jones made a score of 60 on a certain test is in itself almost meaningless. To interpret this performance, in the absence of any absolute standards of achievement, we must know how it compares with the performance of other pupils. We must know also what these "other" pupils are like; that is, we must know to what "population" they belong. The meaningfulness and dependability of a norm with reference to this purpose, then, depends, first, upon the nature of the "population" for which the norm is established, and second, upon the reliability with which it represents that population. There are, of course, any number of populations for which a norm might be established. We might, for example, try to establish a norm for all ninth grade pupils in the United States, or only for ninth graders in the public schools of the Middle West, or only for pupils in the private secondary schools on the Eastern seaboard, and so on, almost without limit. Clearly, the norm used in interpreting the performance of a given pupil should preferably be one established for a population to which that pupil belongs and which is highly homogeneous in character. The test performance of a given private-school pupil, for example, can be most meaningfully interpreted in relation to the performance of pupils in other private schools, all of which are fairly well known to one another and all trying to accomplish similar purposes under similar conditions. Highly generalized norms based upon very large and widely distributed and heterogeneous populations tend to lose specific meaning because of their very generality. The more homogeneous the population, then, the more meaningful the norm established for it. Furthermore, for the sake of reliability, the norm should be based upon a large and representative sample of pupils from the population in question, all tested at the same time

and under the same carefully controlled conditions. Finally, the norm should have been recently established and therefore representative of what is being currently achieved in the population involved.

The second general purpose of test norms is to make possible valid comparisons between scores on different tests. From the point of view which I expressed earlier, this is by far the more important of the two purposes considered. If valid comparisons may not be made between separate test scores, it is, of course, impossible to establish an educational profile for a pupil or to maintain a meaningful cumulative record of his test performances. The important consideration in relation to this purpose is that the norms for each of the tests between which comparisons are to be made be established for the *same* pupils and under the *same* conditions. That is, all norms must be established for the same population. The exact nature of the particular population used becomes, in this case, of relatively minor importance. In interpreting an educational profile or a cumulative record, we are primarily concerned with *relative* achievements, with the high and the low points in the profile, or with the specific areas in which the pupil has shown relatively high or relatively low aptitudes or abilities. In interpreting such results, in fact, we need hardly refer to the *scale* at all, so long as we know that the *same* scale has been employed throughout and that the various measures are therefore comparable. To repeat then, so far as *comparability* is concerned, the major consideration is that the norms for all tests be established for exactly the same group of pupils and schools, with all tests administered under the same carefully controlled conditions.

It should be clear that in explaining these technical requirements of adequate norms I have described, in all essential detail, the types of norms that are now being provided by cooperative testing programs such as the Educational Records Bureau program. It is in the establishment of such norms,

and in thus providing for the comparability of results that is so essential in educational guidance, that these programs have made one of their most definite contributions to educational measurement.

A second major contribution of these agencies, fully as important as the one just considered, has been the vast improvement effected in the quality of the test materials for which the norms are established. As I pointed out earlier, it would have been practically impossible, just a few years ago, to have selected a complete *set* of tests, representative of all the various areas of achievement at the high school level, for which it would have been at all worth while to attempt to establish norms of the type that I have described. The tests then available varied too widely in quality and form and in administrative features. In contrast to this situation, we can now obtain, through the agency of the Co-operative Test Service, a comprehensive set of tests all of which have been recently constructed under central supervision, which are therefore highly consistent in quality and in administrative characteristics, and which are all representative of the most recent advances in the techniques of test construction and all definitely constructed for co-ordinated use in wide-scale testing programs.

The provision of better tests with highly comparable norms does not by any means constitute the only contribution of these co-operative agencies. In addition, they have transferred the construction and distribution of tests from a commercial to a strictly professional basis, which in itself seems to me to be highly desirable. They have permitted the co-operating schools to delegate to groups of highly trained technicians the responsibility for the selection or preparation of the test materials needed. They have relieved the schools of much of the burden of the statistical analysis of test results, and in some instances also of the onerous burden of scoring the tests, thus freeing the teacher and the school official for tasks more appropriate to his abilities. They have, furthermore, provided a ready source of expert advice and counsel concerning

the peculiar local problems of the co-operating schools. In these and in many other ways, they have facilitated the most economical and effective use of test materials.

I shall not take time for any detailed consideration of these additional contributions. While I do believe it is well for us to remind ourselves, now and then, of the various values which we are deriving from agencies of this type, I have certainly not come here simply to extoll the virtues of the Educational Records Bureau or any similar organizations. On the contrary, I have drawn attention to the ways in which these agencies have so greatly increased the possibilities of tests for use in educational guidance only in order that I might better emphasize how seriously we have fallen short of the *realization* of these possibilities in actual practice. My principal purpose in the remainder of this paper will be to draw to your attention certain prevalent practices which are directly *interfering* with the use of test results to their best advantage in educational guidance.

One of the more serious of these obstacles to the best use of test results arises out of the conflicting character of certain of the major purposes for which tests are generally employed. The most significant of these purposes, as I have already presumed you will agree, is to describe individual differences in achievement. However, any test that reliably describes differences between individuals may also be used to describe differences between groups of individuals. To the extent, then, that such group differences are due to corresponding differences in the instructional effectiveness of the teachers and methods of teaching employed, test results may also be used for the evaluation of instruction, with reference both to the individual teacher and to the school as a whole.

In many of the schools now participating in co-operative testing programs, this latter use has been given major prominence. Certain of these schools, it seems, have participated in these programs primarily in order that they may discover how the *average* test performance of their pupils compares

with averages earned in other schools, or to learn in which subjects or under which teachers in their own school the highest average scores were earned, with the implication presumably that the best schools and the best teachers are those which obtain the highest average test performance from their pupils. The degree of interest shown in such comparisons varies, of course, from school to school, but there are very few situations in which some concern is not evidenced about school-to-school and class-to-class comparisons based upon average scores.

From the point of view taken in this paper, these practices are unfortunate, particularly because they create in the classroom teacher an attitude toward the tests which directly interferes with effective use of the results in pupil guidance. In the long run it is the classroom teacher who must assume most of the responsibility for the educational guidance function. The majority of schools are not likely, at least in the near future, to find it either practicable or desirable to delegate this function exclusively to special guidance officers. The guidance officer type of program, furthermore, is too much restricted to the long-time aspects of guidance—to the counseling of students concerning future plans and vocational careers, and to the treatment of special problem cases—those aspects of guidance, incidentally, with which we are least confident of our ability to cope. The most significant and practicable type of guidance, at present, is that which consists of the *immediate* adaptation of instruction in the classroom situation. It is the type, for example, in which the teacher of ninth grade English recognizes, partly on the basis of test results, that Sally Smith has already mastered the mechanical aspects of English correctness, and that she should therefore be excused from routine drill requirements and permitted to devote more of her time to free reading or creative writing. Again, it is the type of guidance in which the teacher of physics discovers that Freddy Clark's impending failure may perhaps be due primarily to his lack of

mathematical ability and that he should therefore be given special remedial instruction in mathematics in connection with his work in physics. Again, it is the type of guidance in which the teacher of English composition discovers from his cumulative test record that William Brown has a highly developed interest in and wide knowledge of practical science and that he may best be motivated to acquire correct writing habits if he is encouraged to write themes on scientific subjects.

If test results are to be used in this way, teachers *must* be made to look upon tests as devices intended to *help* them in the daily performance of their instructional tasks. Undue emphasis upon *average* test results, upon school-to-school and teacher-to-teacher comparisons, and upon the use of tests in the evaluation of instruction or for the rating of teachers, may cause the teachers to regard the tests with distrust and suspicion as instruments that may be used *against* them, to neglect the interests of the pupils, and to be concerned instead with subject matter objectives and with higher average scores for their own sake. In the desire to appear to greater personal advantage in these comparisons, teachers may tend to become unduly concerned with the amount of subject matter that they can get across to their pupils, regardless of the needs of the individual students for that subject matter. Or, again, the teachers may study the *tests* in order to teach *for* them more effectively, rather than study the *results* obtained from the tests for what may be learned about the pupils individually. Under this influence, for example, we sometimes find teachers trying to teach more and more plane geometry to their pupils, or insisting that all their pupils acquire more and more information about ancient history, whereas what many of the pupils really need may be less plane geometry or history and more of something else better suited to their needs and abilities. The very instrument that is intended to help the teacher best serve the interests of his pupils may thus sometimes be used with just the opposite effect in actual practice.

In fairness to the testing movement, it should be noted that this tendency on the part of teachers to think in terms of subject matter objectives, rather than in terms of separate objectives for individual pupils, existed long before tests were used as they are now, and perhaps today is almost as strong in schools that have consistently refused to use standardized tests in any form as in those that are participating regularly in co-operative testing programs. The worst that can be said for the testing movement in this regard is that it has in some instances aggravated an undesirable tendency which would in any event be present—a limitation which has been more than compensated for by the many other positive values in testing.

I have not intended to imply, in drawing attention to the incompatibility of the major purposes of testing, that standardized tests should *not* be used for the evaluation of instruction, or that the school head or principal should show no interest in school-to-school and class-to-class comparisons. On the contrary, these must be recognized as quite legitimate uses of test results, as uses which have been greatly facilitated by the improved types of norms now provided through co-operative organizations in testing. The real issue is one of *relative emphasis* rather than an all-or-none proposition, and the problem presented is one primarily for the school *administrator* to handle.

The degree to which teachers will be adversely influenced by testing programs in the manner that I have indicated will depend upon the recognized policies of their administrative heads in the interpretation of test results. If the school administrator makes it generally known that the average scores obtained by the pupils under each of his teachers are being used by him as a basis for teacher evaluation, if he makes it known that his principal interest is in school ranking and in teacher-to-teacher or subject-to-subject comparisons, then, of course, teachers will tend in self-protection to do what they can to secure higher test averages for their own sake. On the other

hand, if, in all of his discussions with teachers, pupils and patrons, the school administrator continually emphasizes the guidance values of the tests, and consistently refrains from mentioning any uses which he privately makes of the test results in the general evaluation of instruction, these undesirable consequences are not likely to ensue. In any event, the policies pursued by the superintendent or principal will in very large part determine the attitude which will be taken by teachers toward tests and testing programs, and the extent to which they will be disposed to use the results obtained from the tests in the interests of the individual pupil.

Perhaps, as far as the Educational Records Bureau schools are concerned, I have seriously exaggerated the importance of this issue. In our program in Iowa, and in other situations with which I am directly acquainted, I am convinced that it is of crucial importance. If, in your own use of the test results, this is not, after all, a real issue, I shall be only too glad to learn that I have wasted your time in discussing it.

Another factor which has seriously interfered with the most effective use of test results in guidance—and which I am sure has been evidenced here as well as elsewhere—has been the practice of nearly every school to allow its own peculiar curricular organization to dictate almost entirely the selection of the test materials to be used and the situations in which they are to be administered. In many schools it has never occurred to anyone that a test in general science, for example, may profitably be given to a pupil who has never "had" a course of instruction in that subject, or that a test in United States history may conceivably be administered anywhere else than in the history classroom, or that there is any need or place for a test the content of which does not conform to established subject matter boundaries. Let us consider briefly what are some of the consequences of this practice from the point of view of educational guidance.

If the description provided by test results of the relative achievements and abilities of the individual pupil is to be used

most effectively in educational guidance, that picture should, of course, be as *complete* as possible. As I have already indicated, the interpretation of an educational profile or a cumulative record is primarily a matter of noting *relative* performances, rather than of securing any absolute or *independent* description of achievement in a given area. For example, the fact that a certain pupil ranked at the 60th percentile on a test in first-year Latin has quite different implications for guidance if, in all other measures of his achievement, the pupil ranked above the 80th percentile than if his other performances were consistently below the 40th. Thus, the meaning of any one measure for guidance purposes depends primarily upon the availability of comparable measures in other specific areas, and the greater the number of these measures available, the more meaningful each of them becomes. If any single important aspect of the pupils educational development is omitted from or ignored in the description, there is always the possibility that this is the very area in which he most needs individual attention.

As tests are now generally employed, measures are periodically obtained for each pupil only in the formal subjects in which he *happens* at the time to be enrolled, thus leaving very significant gaps in his record as far as his total development is concerned. For example, under these conditions John Smith's test record for his tenth year might be restricted to the scores earned on a plane geometry test, a biology test, a second-year Latin test, and a test in the mechanics of correct English. This record, of course, will provide some indication of those fields among the few tested in which John showed the most promise, and some evidence of his general scholastic ability. Obviously, however, this record could not show, as might well be true, that during his tenth year, as a result of free reading stimulated by unusual aptitude and interest, John had developed very significantly in his knowledge and appreciation of literature or in his understanding of current social, political, and economic developments, or that he has a highly

developed interest in popular science not inclusive of biology. Furthermore, a cumulative year-by-year record of scores thus obtained could not constitute a description of progressive development, even within the areas concerned. For instance, the fact that a pupil earned a 90th percentile score on a standardized test in world history in his tenth year, an 82nd percentile score in American history in his eleventh year, and a 92nd percentile score in sociology, economics or American government in his senior year does not describe the progress that he has made in that aspect of his total development with which the social studies in general are concerned, and therefore cannot show how his growth in interest and achievement in this field compares with growth in other directions. Finally, we may note that because each of these tests would ordinarily have been administered just at the end of the formal course of instruction, and because a period of intensive review or coaching would often precede the administration of the tests, the measures obtained are sometimes unduly influenced by the immediate and often only temporary results of instruction, and may therefore not provide the best indication of the true relative status of the inherent abilities and more deep-seated interests of the student.

These objections, of course, in no sense constitute a condemnation of end-of-the-year use of achievement tests in formal subjects. The use of such tests is too well established to need any discussion here. These objections are only intended to point out the limitations for purposes of guidance of measures secured in this way, and to show the necessity (again from the point of view of guidance) of supplementing these measures with others of a different type and differently obtained.

Perhaps I can best indicate the nature of these other measures by sketching for you briefly some of the features of what might be considered an ideal program of testing for guidance purposes. First of all, the tests used in such a program would be concerned as directly as possible with the

desired ultimate outcomes of a general education, and would avoid placing any undue premium upon the temporary attainment of subject matter objectives, particularly where these are not clearly related to the pupil's needs. These tests consequently would disregard entirely the present arbitrarily established subject matter boundaries, or would conform to them in some instances only by accident rather than by design. For each of a number of broad but homogeneous areas of the pupil's intellectual development, (such as those concerned with understanding of social institutions and practices, with the physical and biological aspects of the pupil's environment, with the tools of quantitative thinking, and with literature and language), these tests would attempt to secure measures of the functional knowledge or the skills and abilities which the pupil had acquired without any regard to whether these abilities and knowledges had been acquired incidentally upon his own initiative or in formal courses of instruction. These tests, furthermore, would yield separate measures for the more important skills essential to successful school accomplishment, such as in the mechanics of correct writing, in reading, and in the uses of library and reference materials. An essential feature of this program would be that all of the tests would be administered annually to all pupils, regardless of the courses in which they happened to be enrolled at the time, and that the norms for all the tests would be established each year for the same stable population, thus rendering the results highly comparable from test to test and from year to year, and making possible the description of the relative growth of the individual in all the more important aspects of his total educational development. These tests would preferably be administered at the beginning of each school year, with no special preparation for them on the part of the pupils. The object of this feature, of course, would be to minimize the temporary, immediate effects of instruction and to emphasize the more lasting and functional values in what has been learned, as well as to eliminate the possibility

that the teachers would feel personally responsible for any average results obtained.

The most unique contribution of such a testing program would lie in the earlier and more certain discovery of those interests, aptitudes and accomplishments of the pupil which are not closely related to the formal content of special subjects currently being taken by him, and which are therefore not revealed by present tests. Such test results, furthermore, since secured early in the year, would make possible the immediate provision of individualized curricular and extracurricular activities that would further develop the pupil's established interests and abilities or supply indicated deficiencies and thus contribute at once to his well-rounded development. These provisions might sometimes take the form of immediate promotion in sequential courses if warranted by the pupil's abilities and past achievements. For example, if a student demonstrated at the beginning of the year that he was already highly proficient in the mechanics of correct writing, he might be allowed to skip the freshman or sophomore course in English and to go on at once to more advanced courses in that field. In addition to these unique contributions, of course, the test results could be used in guidance in all of the various ways in which present test results are being employed.

The values to be derived from a testing program of this type are by no means restricted to educational guidance. Being independent of formal courses of instruction and concerned with many outcomes that are the joint responsibility of all departments of instruction, these tests should exercise a valuable integrating influence upon the curriculum by counteracting the subject matter consciousness which now so thoroughly permeates high school teaching and which often results in undue complacency over results obtained in separate subjects apart from any consideration of the relative values to the pupil of the subject matter taught. Since the tests employed would ignore those subject matter objectives which

are retained in the present curriculum only by force of tradition, and since they would attempt to secure more direct measures of the ultimate outcomes of the whole instructional program, these tests should prove highly effective also for the over-all evaluation of that program, and should encourage a more critical and constructive attitude in curriculum reorganization.

The foregoing is admittedly only a suggestive and in part ambiguous description of an ideal in educational testing and guidance. The attainment of this ideal will be conditioned and perhaps retarded primarily by factors other than improvement in the technique of testing as such. Foremost among these factors is the absence of any authoritative and meaningful description of many of the desired ultimate outcomes of a general education. Until educators agree upon and describe in more meaningful terms the specific changes which education should bring about in the pupil, it is hardly to be expected that satisfactory instruments will be made available for the measurement of those changes. Nevertheless, a great deal of what I have suggested is now quite possible of accomplishment. Using only tests, techniques, and organizations that are now in existence, it would be perfectly feasible to attempt a program that would closely approach the ideal which I have tried to describe. Many of the tests now provided by the Co-operative Test Service are admirably suited to use in a program of this kind. Among these are the co-operative tests in English, literary acquaintance, literary comprehension, general mathematics, general science, and contemporary affairs. Other tests of this character could be readily supplied upon demand. What is needed most of all is increased disposition on the part of the schools to divorce the use of these tests from their own peculiar curricular organizations and to use them systematically for the more complete description of the individual pupil. The Educational Records Bureau has already gone much farther in this direction than has any other group of

schools in the country. The last report of the bureau contained some very encouraging data concerning the increased use of certain of the tests that I have just mentioned, many of which were administered in the fall of the year and apparently independently of the course registrations of the pupils. There seems to be good reason, therefore, to believe that the Educational Records Bureau schools will be among the first to approximate this ideal, and if, as before, other testing programs throughout the country follow their lead, we may shortly begin to realize more fully the greatly increased possibilities for educational guidance that these agencies have created.

E. F. LINDQUIST,
*Associate Professor of Education,*
*State University of Iowa*

# Testing and Guidance in a City Public School System

A PROGRAM of testing usually passes through three stages. The first is a promotional stage which involves acquainting administrators with the nature and value of new-type tests, and an attempt on the part of the administrators to arouse the interest and insure the co-operation of the supervisory staff and the teachers who must administer the tests and utilize the results. This stage usually requires two or three years, depending upon the principal.

The second stage is usually classified as research. It involves experimentation with the test materials and methods, and attempts to insure the proper use of the results by teachers and supervisors. During this period results are compared with those in other localities, magazine articles appear describing the research aspects, and principals and superintendents take considerable pride in being progressive and knowing the facts. This "crowing stage" is probably a necessary aspect of the development of a testing program, but during this stage the pupils receive very little direct benefit. This is not the fault of the tests but of the natural "lag" between the ideals of test makers and school administrators on the one hand, and the ability of teachers and principals or counselors to utilize the methods and materials on the other hand. Too frequently the tests are used merely as corroborative evidence to support administrative decisions and adjustments. This is not guidance, nor is it counseling. This stage usually lasts two or three years, but it may be prolonged indefinitely, depending on the principal.

The third stage has been reached when a testing program is no longer "a nine days' wonder," when the testing instruments have ceased to be charged to "research" in the budget of the Central Office and have become "instructional materials" charged to the budgets of the separate schools, and

when the testing procedures and records have been incorporated as an integral part in the administration, supervision, and instruction of the school. This stage has been reached in very few schools and school systems, but, until it has been reached and continued for a reasonable period of time, it is evident that the ideals of a testing program have not been realized. It takes at least three years for a record of growth to indicate clearly the tendencies of development.

In the Providence schools, testing programs in all of the elementary and junior high school grades have been a regular part of the school work for the past ten years and in the senior high schools for the past six years. Research is only an incidental by-product, rather than a main objective. In only the last two years, however, have test results been incorporated as an integral part of the school record of each child. This means more than devoting space on the record to test marks; it means providing a real record of growth which may be effectively used as a basis for pupil adjustment and guidance. It is unsafe and unscientific to predict results on any other basis than that of a *growth curve*. This is one of the chief values of the I. Q.; since it represents a *rate* of mental development, or in other words a *growth curve,* it has value for the purpose of predicting mental growth.

One of the most urgent and fundamental needs of all schools is that the usual administrative records, which are at present well-nigh worthless for guidance purposes, be transformed into scientific instruments for the continuous study of the individual differences of children, and that provision be made for an organized program of counseling so that these records may be intelligently used for the educational, vocational, and social adjustment of young people. One of the principal difficulties is that each principal is so well satisfied with what he has that he fails to appreciate the need of change and the possibilities of improvements in the field of modern personnel records.

But, no matter how perfect a system of personnel records

may be, the time and labor involved will be largely wasted unless a guidance organization and personnel has been developed that is capable of using them intelligently. For this reason it may be helpful if we trace the steps in the evolution of an organized guidance program in order that we may perceive general tendencies and locate more accurately both our present position and the general direction in which we are traveling.

There are "records of growth" of a guidance program as well as of an individual, and the growth concept is equally imperative.

In the first stage, provision is made for the guidance and adjustment of problem pupils at critical periods in their school careers. Such guidance and adjustment is the chief function of the principal or his various administrative assistants. It is guidance which is necessary or incidental to the administration of the school. For one reason or another the problems of the pupils interfere with the smooth running of the machinery of the school. There are the disciplinary problems, the failures, and the drop-outs at one end of the scale, and the problems of college certification, the honor awards, and the guidance of leaders in various activities at the other end of the scale. These problems demand and receive the attention of the principal, assistant principal, counselor, or dean. The majority of the pupils, however, the middle 60 to 80 per cent of the student body, receive little individual attention. Most high schools are still in this stage of development in their guidance programs. The only reason why the remaining pupils are not considered a problem is that we do not know enough about them and their problems do not become our administrative problems.

The second stage has come about by a better understanding of the principles and functions of guidance. In this stage the aim is to provide guidance for all pupils. Every child is a problem, or, rather, every child *has many problems.* In this stage of guidance the watchword is "every teacher a coun-

selor of youth," and the principal tries to share the responsibility for guidance with his faculty by delegating the guidance functions to home room and subject teachers. The subject teachers are expected to perform the functions of guidance which are incidental to effective subject motivation and instruction, while the home room teachers attempt to take a personal interest in each pupil and to perform the guidance functions which are incidental to the administrative work of the school. Such guidance, however, includes only those services which can be effectively performed by any *unselected* and *untrained* teacher, as a regular part of his or her instructional or administrative duties. If algebra or a foreign language were thus taught, as incidental to other functions, we should have no definite responsibility and little to show in the way of results. Almost every present feature of a home room guidance program was being carried on effectively by the best home room teachers twenty-five years ago. Such work is valuable and necessary, but not new nor scientific nor, above all, an adequate program.

The third stage of development indicates an appreciation on the part of educators concerning the importance of the scientific study of individual differences as a basis for the adjustment of education to individual needs, interests, abilities, and prospects. Beginning with the use of intelligence tests as measurements of scholastic ability apart from actual school work, the scientific study of individual differences soon includes the measurement of achievements, interests, aptitudes, personality, attitudes, and adjustment. Results, however, are interpreted only by administrators and used only for administrative purposes and problem pupils. The skillful administration and intelligent use of these scientific instruments require specially selected and trained persons who may specialize in this field of work. Any guidance program that is worthy of the name must be based upon data of an objective nature used by trained people. Under the influence of these test results, group requirements begin to give way, and

individual programs are more common. The development of specialized guidance departments in secondary schools, however, has occurred in only a very few localities, and, consequently, test results are often not used except in problem cases and for administrative adjustments.

In the fourth stage of development a gradual reorganization of the school program and curriculum begins. *Mass diagnosis* and *mass prescription* are gradually replaced by individual diagnosis and treatment. The usual courses in secondary schools are designed to meet the needs of hypothetical groups. Nevertheless, they are an improvement over the required classical curriculum of an earlier generation, and they are still necessary if no guidance organization exists through which individual diagnosis and treatment are possible. Such courses are much like the old patent medicines which were advertised as cure-alls. Each person, though he lacked both the information and the training necessary to select a prescription among the few possible alternatives, was expected to diagnose his own troubles and select a remedy. Such decisions are often forced upon young pupils before they have either the information or the experience that is necessary for a wise decision. Often the parents are more helpless than the children. The results of such mistakes may be seen in the high percentage of failures; the low level of interest, enthusiasm, and initiative; the "gentlemen's marks" in scholastic achievement; and problems of discipline, truancy, rebellion, and many other ills which beset our secondary school system. For years we have treated the symptoms without any thorough scientific attempt to discover and cure the causes. It is too much to hope for any general improvement of such conditions until school superintendents, principals, and college authorities are willing to go to the bottom of the trouble and develop the necessary machinery and personnel for an adequate guidance program with specially selected and trained counselors who can specialize in pupil adjustment and guidance, and who can investigate the facts

in each case and indicate an intelligent solution. No general prescription will do.

But testing, investigation, diagnosis, adjustment, and prescription are not guidance. These are research, personnel, and administrative functions; guidance or counseling techniques are instructional in nature and do not mix with administration. Until this fundamental principle is understood by principals and superintendents, further progress is impossible. Consequently, in the fifth step we find group guidance a regular part of the curriculum. Even with all available tests and counseling instruments, and with trained counselors for the work, and an adequate time allotment for individual interviews, even with twenty times as great an allotment as any now in existence, there would still be left much to be desired in an organized program of guidance. True guidance must be a training for self-guidance, and any adequate program of self-guidance requires much more time and expense than can be provided by a few occasional interviews during a child's secondary school course. To draw a parallel, it is fair to ask how well a secondary school child could be trained to solve his problems in beginning algebra as a result of six routine interviews, one each term, throughout the junior high school grades, or even with a double portion of such interviews for good measure. Twelve half-hour interviews appear meager in comparison with the one hundred and eighty periods usually provided in the ninth grade for algebra.

It is fair to ask which is the more difficult task, the training of a pupil to solve his algebra problems for college entrance, or the training to solve his problems involving educational, occupational, and social choices sufficiently well to insure a reasonable measure of success in meeting the problems which he is sure to encounter during his secondary school and college years, and especially during the period of adjustment in employment which immediately follows. There can be no comparison between the difficulty or the importance of the two tasks. If we really want a life-centered curriculum, why

not find time in school for the discussing of the actual problems common to all children? Modern educators may seem very ridiculous to future generations for assigning one hundred and eighty hours to the former task, and attempting to perform the latter during a few brief interviews. If we could provide a fifteen-minute interview every day for three years, it would merely equal the amount of time spent upon algebra in one year. But even such a program would be expensive and inefficient, provided it were possible.

The obvious thing to do is to separate the problems that are common to the large majority of students from those which are peculiar to each individual, and to deal with common problems in a group guidance curriculum by means of class instruction. This procedure would save much of the time which must otherwise be devoted to individual interviews. Group problems can be dealt with every effectively on an impersonal basis through group counseling techniques. In fact, they can be handled more effectively by group instruction than by interviews.

But what problems are common to senior high school pupils? We must have a well organized curriculum if it is to have a place in the school program. In 1932, at the meeting of the National Vocational Guidance Association in Washington, there was appointed a joint committee of the City Directors of Guidance and the College Teachers of Guidance. The report of that committee is available. It contains sixty common problems which are a tentative basic curriculum for a group guidance course in the secondary schools. Four general types are included: (1) problems involving information about educational opportunities, (2) problems involved in the study of occupations and occupational problems, (3) problems of personal and social relations, and (4) problems involved in the study of individual differences. These last include self-measurement projects involving (*a*) skills and background, (*b*) subject achievement, (*c*) information, interests, and adjustment, (*d*) special

abilities or aptitudes, and (*e*) personality and attitudes. The chief emphasis of this report is upon group guidance techniques which are essentially instructional techniques and which conserve the values of the individual interview while dealing with groups of average class size. This procedure effects the necessary economies required to reach the entire student body and to make guidance a part of instructional rather than administrative costs.

Problems that are peculiar to each individual will naturally require individual attention. Sufficient time for such individual work can be secured only through economies effected by the group guidance program. One special advantage of the group guidance attack is that it need not increase costs. It is evident that, when a new gymnasium teacher is added to the faculty and health work is provided in the regular curriculum, the adjustment is made through a rearrangement of the time schedule of pupils and the teaching schedule of the faculty. Pupils may pursue some studies for four periods instead of five each week, or they may have fewer study periods. The actual number of members of the faculty may still remain the same, since the changes in the program and curriculum absorb the cost.

To look at the program in reverse, if the present group guidance course were eliminated from the junior high school system, the pupils would have to have more study periods, or more English or algebra. The cost would be the same. In fact, it is entirely possible for a principal to introduce such a guidance organization without a material increase in school costs. Under no circumstances would the cost be greater than that represented by the addition of one pupil per class section in all subjects in order to provide time for individual interviews. Usually teachers do not object to such an increase, if they receive assistance in problem cases from a counselor who understands each child. Moreover, the more scientific grouping of children for instructional purposes prevents many failures and greatly facilitates both individual and

group instruction in all subjects. Eventually education may gradually cease to be an aimless competitive struggle for survival, and become a conscious individual effort toward a definite goal.

At present the chief obstacle to the development of group guidance programs is a lack of understanding on the part of school administrators. Testing is regarded as the function of the research department rather than as a method of collecting all obtainable data to serve as a basis for the counseling and adjustment of pupils. Counseling is still regarded as the kind of work that the principal formerly carried on, namely, the administrative adjustment of problem pupils at critical periods in their careers, or as the kind of friendly personal interest and advice which experienced subject teachers and home room teachers can pass out to young people. They do not see that individual counseling must be based upon personnel records, and that from the common problems discovered through the interviews there must be developed the basic units of the group guidance course. They do not yet appreciate the importance of the group guidance course as a means of continuous contact between counselors and students over the entire period of their school life in order that the counselors may not only study the records of growth in school subjects, but also observe and record growth in personality, interests, activities, ambitions, and objectives. Most important of all, administrators have failed to see the essential similarity between the techniques of individual guidance and of group guidance. Both are essentially *instructional techniques* rather than *administrative decisions*. They do not involve solving problems for children or for their parents, but rather presenting problems to pupils and parents for their own solution, and helping to accumulate and study the necessary data upon which satisfactory solutions must be based. These data include a continuous growth record of every child throughout his entire school course; not only records of mental growth as shown by intelligence tests, but

also records of educational growth in all of the subjects of instruction, records of growth in personality, interests both inside and outside of school, and records of activities as well, —the kinds of facts that are recorded on the forms of the Educational Records Bureau. These data also include the facts about occupations, the employments of the people in the community, the necessary requirements, training, and other features which trained counselors are stressing every day in the study of occupational units in the group guidance course. It is only by building such a foundation of knowledge of educational and occupational problems and of individual differences that we can improve the wisdom of choices and the solution of personnel problems.

The emphasis upon testing and the keeping of records may tend to alarm some counselors as well as some principals and superintendents. There is danger that they may follow the example of the teacher who, in desperation, cried out, "Stop testing, and let me teach!" In this desperate situation, however, there is hope ahead. New-type tests of the very near future will be broken up into convenient units so that it will not be necessary to alter the school program in order to administer them. Each test may be taken during the regular school period and may not even be announced in advance. Moreover, it need not be followed by hours of burning the midnight oil by the tired teacher after the day's work is done. There is a new mechanical servant to relieve the teacher of all of the drudgery of test correction. It is now possible for the tests of fifty pupils to be corrected in five minutes and returned to the pupils even before they leave the classroom. In fact, each pupil can drop his own test in the machine and read the answer. This machine can be used on any multiple-choice test. It is even possible to give each question a definite weight.

Last spring the machine had a thorough try-out in the Providence schools, correcting the tests for candidates for teaching positions, most of the co-operative tests in grades

nine through twelve, and the Iowa Test of Basic Study Skills in grades seven through nine. This machine will be on the market with the beginning of the next term and should soon be used as a common facility in every school much as a cash register is available in every store or even on every counter. Incidentally, the machine saves its own cost since the same test may be used in many class sections and then filed away for future use as permanent laboratory equipment.

Enough money was saved in the cost of the testing program last term to pay for the use of the machine for the next two years. With such a machine available, instead of testing each pupil every year, it will be possible to test every term or even every quarter, with a comprehensive test, to say nothing of shorter tests whenever a unit of instruction has been completed. With such a machine, testing will no longer hold any terrors for the conscientious teacher or counselor, and records of growth will become the regular order rather than the exception.

RICHARD D. ALLEN,
*Assistant Superintendent,*
*Providence Public Schools*

# The Arts in American Education: Some Critical Issues in College Education

ONE of the most serious occupational hazards in my particular calling is, in my judgment, the opportunities for public utterance. As I grow older I can feel a growing reluctance to pontificate upon a wide variety of subjects. I am sure it is bad for the pontificator and tiresome for the pontificatee. So today I am going to try an experiment. I am not going to read a paper, and I am not going to make what, God save the mark, is known as an inspirational address.

I have before me a series of questions which I propose to ask myself as well as my audience. Whether these questions will arouse a discussion which in itself will be profitable, I do not in the least know. The only way to find out is to try.

1. What does a college degree mean—what is the irreducible minimum?

2. Would any stretch of faculty imagination—or the lack of it—defend the position that the college degree today means the possession of any common fund of information?

3. Must we rather assume that the essential factor, the irreducible minimum, is the trained capacity to deal with intellectual concepts, the capacity to be ascertained as a basis of admission and the training of that capacity to be the basis for remaining in college and ultimately graduating?

4. From this point of view can we conceive of the college primarily as an environment in which the student can receive such training in satisfactory and useful ways?

5. Are we, by the way, prepared to exclude from admission or from the degree certain young people clearly lacking trainable intellectual capacity, but with exceptional gifts in other respects, as, for example, the capacity to punt a football for 75 yards?

6. Can we assume that both the capacity to deal with intellectual concepts and the effects of training that capacity in college can be measured with reasonable accuracy, and that, therefore, if we accept these as the irreducible minimum, college admission and college graduation need not be a matter of hit or miss?

7. Are we ready to say that the trained intellectual capacity is all we should seek in college, or should we welcome in our student bodies (not as a substitute for this, but over and above) certain other human attributes—bodily fitness, for example, social graces, evidence of the old-fashioned virtues: courage, loyalty, and the like, and—to get to the subject of today's discussion—sensitiveness to esthetic impressions and creative capacity in the arts?

8. If we are agreed that these other qualities are desirable, are we prepared to say that we are able to measure them with the same degree of accuracy as intelligence and the training thereof? We may answer "Yes" without much hesitation as to bodily fitness, but how about the others?

9. Can we say that the college environment is or can be made a fruitful environment for exercise and training in the arts, and, if so, can such exercise and training be properly taken into account in the award of an academic degree?

10. Is there evidence that the college as at present organized has failed to admit, or if admitted has failed to hold students whose interests and talents are creative rather than receptive? Does the proportion of distinguished American painters, sculptors, musicians, poets, who hold college degrees throw any light upon this question?

11. Is there in great art a significant intellectual aspect as contrasted with the purely esthetic? Is there also a body of more or less useful factual information as to the arts which may be conveyed in college? Is there a danger that college teachers of art may mix up these two matters in their thinking, and consequently in their attempt to measure the result of their teaching?

12. Let me drop the question marks long enough to remind you of President Neilson's classic observation that subjects are included in the college curriculum, not in terms of their value to the student, but in terms of their examinability.

13. If we watched college courses in painting, music, poetry, as actually offered today, would we find evidence that such courses are loaded with items of factual information, inserted, so far as one can see, for the purpose of providing a means at examination time for the professor to decide whether the student has "done his work"?

14. If this be true, what must be the effect on the teaching and on the student?

15. Rather than ask ourselves whether there may be a better way of testing capacity and progress of the arts than by examining the examinable, let us shift the line of our inquiry for a moment.

16. Does the chemist have to analyze each and every drop of the liquid in his test tube, or must the biologist measure all the ferns or all the frogs that he can get hold of? If not, need a faculty measure every item in a school or college program before it can say with confidence whether a given student should be either admitted or graduated?

17. Could our educational psychologists find out and tell us what percentage out of the total of such items in the college program need to be measured to guarantee with reasonable accuracy the presence of that trained intellectual capacity which we have been talking about—or, to put it the other way around, what share, if any, of the student's time may safely be released from our measuring machinery?

18. Is it true that modern techniques of admission to college do, in effect, operate to accord a substantial degree of just this kind of freedom to the school boy, incidentally without tragic results so far as one knows? In advance of the findings of the educational psychologists as to college, but in the light of school experience, might we assume as a working hypothesis that 40 per cent of the college students'

time might be freed from our present system of examinations without seriously affecting the validity of faculty judgment as to whether the student is entitled to a degree?

19. Now let us turn back to an earlier question. We asked whether, in addition to intellectual capacity and training, there were other qualities in the student, other experiences in college, in themselves desirable. If the answer to this question be in the affirmative, let us ask whether such experiences would be richer and more useful to the student if gained in an atmosphere of freedom from compulsion, as exerted by examinations, and specifically whether this is true of the arts?

20. Shifting our line of inquiry once more, let us ask ourselves this question: Would the 40 per cent freedom, if accorded, be abused by the undergraduate? Does the experience of Harvard with reading periods, of Chicago with the abolition of the roll call, help us to answer the question?

21. So far as the arts are concerned, have we reason to believe, on the other hand, that a student genuinely interested in this field has certain inner compulsions which will keep him hard and happily at work despite the absence of any sword of Damocles in the form of a pending examination?

22. Would the intellectual content of a college course serve to enrich the esthetic experiences of such students in a way that the professional art school cannot? In other words, will the boy or girl with brains, who is interested in the arts, be better off in college than in art school? Does the answer to this question depend on whether he can pursue his artistic interests in the realm of freedom?

23. Would the 40 per cent suggested provide freedom to the student not only for the arts but for other desirable but non-examinable undergraduate enterprises?

24. Is the presence in the student body of members, not only with intellectual capacity but also with interests and talents which are creative rather than receptive, of sufficient importance to the college to justify it in mending its ways, if they need mending. Specifically, should the college cease

from attempting to measure things which as yet no one knows how to measure, to the end that students of the type I have just tried to describe may first be welcomed as freshmen, and then kept happy and productive throughout their course?

I admit that this last question is not quite fair in the form in which I have put it, but I have tried to make its predecessors reasonably fair in the form in which I have put them. At any rate I present them all to you for your consideration.

FREDERICK P. KEPPEL,
*President, Carnegie Corporation of New York*

# The Integration of Personality in Secondary Schools

THIS conference is in part, at least, a recognition of the increasing influence which mental measurement is playing in the field of education. As such it is a tribute to the services of the Educational Records Bureau under the leadership of Dr. and Mrs. Ben D. Wood. Largely as the result of activities of this Bureau, independent schools are now able to establish a testing program in the field of academic aptitude and achievement, which is both comparable and objective. The value of the results for the purpose of comparison is so obvious that it needs but little emphasis. It is possible for us now to lay before a student a factual body of evidence upon which he can base his educational plan.

It is also possible for us to draw attention to the differences which exist between the student body in one institution, and those in another. It is a very salutary thing that we are able to compare our achievement with those of other secondary schools.

Perhaps the chief significance, however, lies in the objectivity of the record, the fact that subjective teacher opinions are reduced to a minimum, that a boy cannot say that such and such a teacher is prejudiced against him, and for that reason has minimized either his achievement or his ability.

Further, I think that all of us who are connected with secondary schools are grateful for the opportunity which the services of the Bureau affords for presenting to the parents objective evidence, both of ability and achievement, which makes it possible for us to reinforce the statement of Plato that golden parents sometimes produce silver sons.

There is no greater *amour propre* than that of the parent in regard to his son or daughter, and there has been nothing more difficult than the attempt to build the educational future

of a student, in co-operation with the parent, upon what we know he may reasonably be expected to do.

Because of the increasing success of these techniques, I have asked permission to depart somewhat from the usual emphasis of this conference, and to turn your attention from the first part or the front page of the cumulative record card which contains, as you know, tests, scores, and percentiles, (an invaluable graph of a boy's progress, or lack of progress) to the reverse side. How many of us really use the reverse side of the card? Here we find something in the nature of a case record of the individual student. Not in terms of academic aptitude or achievement, but of his social background, his health, his personality. The card begins with the general health, with the religion of the parents, and their racial characteristics, and it attempts, furthermore, to describe the student, his discipline, the influences of the home, his mental and emotional characteristics, his physical and athletic aptitudes, his extracurricular activities, his noticeable accomplishments and experiences, and, what is very important, his educational plans.

At the bottom of the card there is a brief space devoted to a simple personality rating, a very brief space, given to a very difficult problem. In contrast with the scores and percentiles which are to be found on the other side of the cumulative record card, it is obvious that the material contained in this social and personal history is neither comparable nor objective.

It must not be assumed that the absence of these qualities is due to the fact that teachers do not consider them to be important. For one reason or another, we have evaded what I believe to be a responsibility. One reason is undoubtedly the fact that the progress in the field of mental measurement has not been paralleled by corresponding advance in the testing and description of human personalities. To divide a human personality into two entities, academic and personal, is an obvious theoretical abstraction, for the educational

process must concern itself not with intelligence alone, but with the total functioning mind. The purpose of education has as its objective the total personality. Any other approach to the problem seems to me to be an over-simplification. It has been both our inability and our unwillingness to view human personality as an integrated unit, which has made prediction of progress faulty and adjustment to later challenges difficult or impossible.

In short, it is my contention that academic ability and achievement alone, grades, scores, and percentiles, do not afford an adequate basis upon which to predict that wider adjustment to reality necessary for successful functioning both in college and in later life.

The successful individual is one who possesses an integrated personality. You may ask me what I mean by an integrated personality. I recognize that the departure of my paper from that which is customary here is not as radical as I had anticipated. Only yesterday, Dr. Day of the General Education Board introduced the phrase "integrated personality." I suspect that Dr. Gates in the paper which follows mine will have something to say of a related nature, and I am told that Mr. French this afternoon will make a brief and practical reference to the problem. But one does, I think, find a great deal of misinformation on the part of parents and teachers.

I can remember a headmaster's conference in which the secretary suggested that one of those present should speak on the problems of boys. One man rose to say that he was there to emphasize this fact: that boys have no problems except to do their work. Is it not possible that in that statement there is a common confusion between effect and causation? Is it not probable that this headmaster was dealing with end results rather than with causative factors? It just so happened that I knew one or two of his graduates. And I remembered that their adjustment to their life problems had been faulty, to say the least, and that the conditions

producing that later maladjustment were present during their school years. Those boys had other problems than the one he stressed. Of course, every boy ought to do his work, but the question is: Why does not he do his work?

Let us attempt a definition: An efficient and well adjusted individual whose habits and mental attitude toward life are so well organized that he is capable of making the essential compromises called for by the obstacles that he meets possesses an integrated personality.

The individual who is approaching his maximum efficiency and getting out of life the maximum of happiness is the individual who has acquired habits that work out to his or her advantage.

Or, stated negatively, the disintegrated personality is one in which infantile regressions are symptomatic of retarded development of a physical, mental, or emotional nature. This obviously is the divided self, dissipating psychic energy and conflict. The self which has made its adjustment to reality and learned to accept the authority of reality needs one further characteristic.

Without emotional maturity integration is impossible. Only then is the individual able to bring all his energies together and concentrate them effectively upon a single goal. I shall have occasion to discuss these statements in an effort to relate mental health to education.

May I say again, that to my mind academic ability alone is not a sufficient basis for the prediction of later success. I believe that the statement can be substantiated by investigations which have been made in various fields. Witness, for instance, the results of the studies made by Dr. V. V. Anderson while psychiatric director of R. H. Macy and Company of New York, and described by him in an interesting volume entitled *Psychiatry in Education.*

Dr. Anderson states:

> Thousands of case histories in our files go to prove that what industry asks of the college man or woman is an inte-

grated, adjusted and effective personality, and not certain courses he or she may have taken in college. To one who sees these issues from the outside it is hard to understand the failure of our educational institutions to emphasize the development and training of the whole personality, as their ideal, rather than rest content with the grades attained in chosen or required courses. Here is a job requiring the guidance of all those sciences that contribute to an understanding of the human personality.

May I briefly sketch the results of Dr. Anderson's experience. R. H. Macy and Company made an attempt to collect promising material from the graduating classes of several universities. This material was trained and then placed as junior executives for possible promotion. After eleven years a check was made on the results. Out of 646 individuals, high ranking graduates of colleges, 190 were known to have been unsuccessful within six months, or about 30 per cent. It is well to remember that these figures do not include those who resigned by request, or that 20 per cent for whom no promotion was expected.

These failures, however, were not due to lack of intelligence, or to poor health or to lack of education, but to deep seated personality characteristics, such as lack of adaptability and purposefulness, the absence of ambition, and poor work habits, all of which were present not only at the time that the individual left college, but probably during his school years. They suffered from unresolved conflicts, from repressions, from alternating periods of optimism and despondency, from feelings of inadequacy, or insecurity, from intense shyness or self-consciousness. In spite of the fact that three-quarters of these failures tested at superior intelligence, they were almost never integrated personalities.

As a result of this experience, R. H. Macy and Company decided to follow a somewhat different method. They insisted that all applicants should be interviewed by trained representatives, by individuals who knew something of the general principles of psychiatry, and, in consequence, out of

this selected material approximately 90 per cent of those who were employed proved good executive material. Further implications are of interest. In 1930 out of 344 college men and women examined only two were considered to justify employment. Thirty other promising candidates were accepted for training for non-executive positions.

From these and other figures Dr. Anderson estimates that from 85 to 90 per cent of high ranking applicants from colleges were rejected, and less than one per cent were considered to be potential executives.

On the college level the information is not as detailed, and yet it points to the same conclusion. The history of the mental hygiene movement in colleges is well known. The Commonwealth Fund financed such an experiment at Yale in 1926. Although at first the emphasis was upon problem types, the psychiatric workers finally came to see that the work of mental hygiene in college was a question which concerned the happiness and the efficiency of the average normal person.

The late Dr. Frankwood Williams has defined the objectives of college mental hygiene work as being the conservation of the student body, so that intellectually capable students may not be forced to withdraw unnecessarily, but be retained —the forestalling of failure in the forms of nervous and mental diseases immediate or remote, and the minimizing of partial failure through later mediocrity, inadequacy, and unhappiness. The making possible of a larger usefulness by giving to each fuller use of his intellectual capacity through widening the sphere of conscious control, and thereby the sphere of social contact.

In other words, the program is largely preventive, dealing with the mental health of the average normal person. I stress this because of the fact that there may be some individuals in this audience who feel that everything which has to do with mental health partakes of the problem case. So frequently a headmaster solves the difficulty by saying, "Oh, this is a problem boy." Yet we have never had an adequate

definition of what "a problem boy" is. We realize that there are boys who cannot be educated in a secondary school system, and that these are problem boys. We realize that there are individuals incapable of making a good social adjustment, and these again are problem boys. But every boy, and I might say every man, has problems which lower his effectiveness and his happiness, and it is not of the abnormal cases that I speak today, but of the average normal boy or girl in our secondary schools.

The same results to which Anderson has pointed have been found by men like Stanley Cobb in a study of the freshman class at Harvard. Here 16 per cent possessed neurotic constitutions. In fact, Williams insists that 95 out of 100 students in our colleges show a need of guidance, and if that is true the same thing must be so in schools.

As far as the school age is concerned, very little statistical information exists. To be sure, various members of the faculty have a large body of information in regard to the boys or the girls. That information, however, is not pooled for effective use.

Recently, I sent out a request to some sixteen headmasters for information in this field and received practically nothing in reply, except the boy's academic record. It is apparent that parents and teachers are uninformed in regard to the simplest questions concerning human behavior.

May I for a moment or two sketch some of the personal characteristics with which all of us as headmasters have to deal. Of course it is obvious that the family is dominant in the field of causation. Heredity may be fixed, but certainly intelligence should be able to control some of the environmental factors which surround a boy or girl in the home situation. Every teacher has to deal with material which has been definitely conditioned by the stimuli of early childhood, such as the standard of living of the family, the cultural background of the parents, the presence of divorce and its bearing upon the children. More important perhaps is the

way in which the personality pattern is determined by direct parental influence. Are the parents, for instance, conscious of the biological nature of the conflict between the older and the younger generation, and of the importance of this conflict for progress? Do they respect the son's will to power? What is the rôle of the father in the family? Does he realize that the integration of a son's personality demands that someone, preferably the father, must be ready to say "no" to the boy's instinctive wishes? This factor is obviously neglected in the American home. Is the father aware of the fact that he often views the son as an extension of his own ego? How often we hear statements such as, "If my boy can't get into Yale, he is not going to college. I played on the team when I was there and my son must follow me." Or, "I want my boy to get into Harvard in order that he may make certain associations with which I think I can assist him. No other place will do." One wonders if fathers recognize the part which their ego plays in matters of this kind?

What of the rôle of the mother? Is she aware of the danger of using her son as a source of emotional satisfaction? Can she estimate the nature of the unconscious bond connecting them? Does she accept the fact that a boy must emancipate himself from the thraldom of the home if he is to become emotionally mature? Can the parents in consultation with the teacher adopt an objective attitude toward the boy's problems? Do teachers recognize themselves as parent substitutes? Thus education necessarily includes the adjustment of the home background. All of us, I am sure, have found that until we can change the attitude of the parents towards the boy we can accomplish but little.

Now let me go on to certain other characteristics which play an important part. There are the developmental problems which focus around the conflict between the reality and the pleasure principles, involving the mechanism of extroversion and introversion. Do we allow for both types? We will do well to examine a pupil in the light of his defense

mechanism. Does he rationalize in an attempt to escape reality? Do we know the part that phantasy plays in his life, in his search for major satisfactions? Does he know how to work when working, and how to play when playing? Thus we find the emphasis on either the reality or pleasure principle a test of personality integration. Does the individual secure his main satisfactions in overcoming objective difficulties in the world of reality? These characteristics are all connected with the mechanism of evading the disagreeable, which is the natural tendency, but which is one which has ruined many lives.

Do we recognize the part which ambition plays? Have we adapted our curriculum to the individual so he has a reasonable opportunity for success? Are we aware of the devastating influence of a sense of inferiority? Do we know that here guidance can have but little effect, that over-solicitude and coddling is dangerous in the extreme, and that the individual if he is to overcome this sense of insufficiency must find achievement on the basis of his own power. Here nothing succeeds like success. There are many other minor forms of maladjustment, which prevent the individual from attaining an integrated personality. The acid test, I repeat, is the ability to face the challenges which reality presents, to attack problems and to gain one's major satisfactions by overcoming them. Such an individual is emotionally mature. He is effective, happy, and integrated. Such a boy or man will not long be satisfied with any other substitute.

It follows that if the schools are to add the integration of personality to their prevalent emphasis on academic achievement, it will be necessary for us to stress three essential characteristics in the individual. They are simple, but often overlooked. First, the student must gain self-knowledge. He must be made aware of the main patterns of his personality, of his capacities and his limitations, mental, physical and emotional. He must, in short, develop a personal philosophy which emphasizes his positive qualities as a basis for achieve-

ment. To this end he will need sympathetic guidance, instruction dealing with normal behavior patterns, selected reading in special groups, and possibly a course in the principles of mental hygiene. Personality and vocational tests may prove helpful as they are perfected, but the teacher himself must be made aware of the simple phases of mental health, and able to refer students to others capable of giving advice.

Secondly, the individual must be taught the value of self-discipline. This can come only out of knowledge and experience based on meeting life situations. To the degree that the personality becomes integrated, and the individual accepts the authority of reality and makes the essential compromises with his instinctive wishes, will he learn to make right choices.

And the third desirable characteristic is that of self-direction. Self-knowledge and self-discipline must produce a dynamic result. Primitive energies are to be directed towards socially useful behavior.

Thus I have attempted to lay before you some of those factors which seem to have a bearing upon my general thesis. In closing, may I draw your attention to a bulletin sent out by the Educational Records Bureau only last July containing a summary of a study made by H. A. Landry on the relative predictive value of certain college entrance criteria? The criteria studied were, first, the final marks in the last year of secondary school work of 416 boys in sixteen independent schools; second, their marks on college entrance examinations; third, the scores on the tests of the Co-operative Test Service; fourth, the scores on the college board tests of scholastic aptitude. These were correlated with the final marks of the same students at the end of their freshman year in three eastern universities.

The inter-correlation between these four criteria and the freshman marks show a coefficient of only .62. Such a coefficient points to the presence of correlation with disturbing factors not measured. The highest correlation is that be-

tween freshman marks and the secondary school marks, but this is only .625.

Thus Landry concludes, "It is evident that there is great need for the improvement of both admission and placement criteria and of measurement of college achievement." Numerous recent investigations of the relation between personality factors and college success are indicative of the widespread realization that present entrance criteria do not provide an adequate description of the individual candidate. I cannot escape the conclusion that the most promising instrumentality for improving admission is the cumulative guidance record, which presents evidence of trends of growth, not only in academic subjects, but also in such important matters as personal development, social adjustments, attitudes, and habits.

It is in the hope that the secondary schools may become more successful in making the integration of personality their educational goal that I respectfully suggest that the Educational Records Bureau act as a clearing house for investigations being made in many fields. There is no panacea. Personality tests and personality descriptions which are adequate must be developed slowly. We will attack the situation better only when we possess more comparable and more objective means.

PERCY G. KAMMERER,
*Provost, Avon Old Farms*

# The Psychological Basis of Remedial Reading

## FREQUENCIES OF VARIOUS TYPES OF READING DISABILITIES

IN CONSIDERING the problems raised by the prevalence of reading disabilities, two general facts should be considered. The first is the fact that the curriculum of American schools is primarily a reading program. The second fact is that failure in reading, in a sense to be indicated presently, is still relatively frequent. The seriousness of the problem is indicated by the fact that a large percentage of failures in school work, in general, can be traced to serious disabilities in reading. For example, in the second grade about 98 per cent of the general failures are found among pupils who have failed to learn to read adequately.

Failure in reading, which in turn causes general school failure, almost invariably has serious social and personal consequences. For example, among a hundred cases of reading disability taken at random from the speaker's files, the following types of maladjustment are shown:

1. Nervous tensions and habits such as stuttering, nail-biting, restlessness, insomnia, and pathological illnesses—10 cases.
2. Putting up a bold front as a defense reaction, loud talk, defiant conduct, sullenness—16 cases.
3. Retreat reactions, such as withdrawal from ordinary associations, joining outside gangs, and truancy—14 cases.
4. Counter-attack; such as making mischief in school, playing practical jokes, thefts, destructiveness, cruelty, bullying—18 cases.
5. Withdrawing reactions; including mind-wandering and daydreaming—26 cases.
6. Extreme selfconsciousness; becoming easily injured, blushing, developing peculiar fads and frills and eccentricities, inferiority feelings—35 cases.
7. Give-up or submissive adjustments, as shown by inattentiveness, indifference, apparent laziness—33 cases.

In only 8 cases was there evidence that the pupil developed a constructive compensatory reaction, such as special ability in drawing or singing or dramatics.

Failure or serious difficulty in reading is, under present conditions, a major catastrophe in human life, as serious in its consequences to children as financial or marital failure is to adults.

The frequency of failure or serious disability in reading is difficult to define exactly, since there is some disagreement concerning the degree of retardation below the recognized norms at which the line between moderate and serious difficulty should be drawn. Until recently it was customary to consider as serious reading disabilities only those pupils who failed to achieve during the first grade a level of ability sufficient to enable them independently to read typical primary material. At the end of the first grade approximately 17 per cent of the pupils in American schools failed to achieve this level of competence. Above them are an additional 10 per cent who may be described as poorly equipped in reading and likely to encounter difficulties in later grades. Of the pupils now classified in the second and third grades, at least 15 per cent are so seriously handicapped as to be unable to do satisfactorily the minimum amount of reading required in the typical classroom. In these three grades will be found in American schools nearly a half million pupils who are subject to such serious disabilities as to make most of their school work a prolonged period of frustration. In the New York City schools approximately 18,000 such pupils were located in 1933 and for the treatment of whom a P. W. A. project was inaugurated in January, 1934. This project has been continuously in operation with a staff of from 400 to 750 remedial teachers since that time. Over 12,000 cases have been given remedial instruction with successful results in about 93 out of 100 instances. This group represents the most serious of all of the types of reading problems.

The problem of reading disability is not limited, however, to the first three grades. Some years ago one of my students, Dr. Doris Lee, discovered that the program of the typical school in grades 4, 5 and 6 demanded at least a reading ability represented by a grade score of about 4.2. That is to say, the amount and ability of the reading required in these grades were such that they could not be successfully met by a pupil whose reading ability was lower than a grade score of 4.2. Practically all pupils with a lower grade score showed a low accomplishment quotient in practically all of their school subjects. Unless such a child was gifted with exceptional intelligence, he was likely to fail in his school work. Thus, the old assumption, that a pupil who was retarded in reading by only a half or full grade at the time of beginning work in grade four was not seriously handicapped, was proved to be faulty. Making what we now call the fourth grade hurdle represents a special problem in reading instruction.

A recent survey of about 12,000 pupils in grades 4, 5 and 6 in a large city shows that about 30 per cent of these pupils have not jumped the fourth grade hurdle. All of these children are laboring in their various school subjects, seriously handicapped by inability to use the primary tool.

Recent studies have shown that there is a similar minimum requirement for investing ones intellectual ability reasonably well in the work of the junior and senior high schools. While the critical point is here not quite so well defined as at the lower grade levels, it can be conservatively placed at a grade score of 7.2. In a recent investigation of about 600 pupils in grade 9 in a city with a better than average school system, it was found that 12 per cent of the pupils did not exceed this score. It is significant to discover that some of these pupils had not even surpassed the fourth grade hurdle. The distribution of reading scores below the seventh grade norm were as follows:

Grade 6 — 5 per cent
Grade 5 — 3 per cent
Grade 4 — 3 per cent
Grade 3 — 1 per cent

When it is realized that these figures are superior to the average, it is clear that a typical ninth grade presents serious problems for diagnostic and remedial work in reading. In the general school population it is probable that, of the pupils in the junior and senior high school, at least 1 per cent are mere third grade readers, 4 to 5 per cent fall below the reading ability required for grades four to six, and probably 15 per cent or more fall clearly below the minimum level required for eighth grade work. In all probability, at least 25 per cent lack the reading ability called for in the typical eleventh and twelfth grade programs.

### THE CAUSES OF READING DISABILITIES

It is very difficult to discover the primary causes of reading disability in the case of pupils who have been in school from two to twelve years. Often the difficulty originated years before any kind of study of the problem is made. In many cases the difficulty goes back to factors in operation in the first grade. In fact, most of us who have been studying the problem are convinced that the majority of the difficulties originate during the first year of work. On the other hand, there are pupils who have made normal or only slightly less than normal progress during the first two or three years, only to fail to acquire some of the higher level techniques. In fact, a pupil may habituate his methods of reading at almost any reading grade and continue to function on that level for the rest of his life. Among adults, including college graduates, there are many persons whose reading ability is essentially the same as that of a typical third, fourth, fifth or sixth grade pupil.

With relatively few exceptions among the retarded readers, the higher the reading ability, the easier it is to bring about

appreciable improvement. The most difficult cases to handle are the so-called reading failures in the first and second grades. Despite the fact that these are the most difficult cases to remedy, they are the ones that we now understand best. This is due in part to the fact that they have been more thoroughly studied and partly to the fact that they are studied more nearly at the time when the difficulties arose, and it is easier to discover what factors probably contributed to the reading defect.

A large number of specific constitutional handicaps and deficiencies in instruction can produce reading failure or retardation. In our discussion this morning it will be necessary to group the causes into a few rough categories to indicate the types of factors which tend to produce reading defects.

The first group consists of a wide variety of constitutional limitations which a pupil may bring with him to the first grade. Among these factors are low intelligence quotient, low mental age, a variety of visual defects, deficiencies in hearing, lack of aptitude for phonetic analysis, poorly co-ordinated attention, nervousness and emotional stress, motor inco-ordination, speech defects, various types of glandular imbalance, poor health and low stamina and others. Any one of these, but especially a combination of such handicaps, may be responsible for difficulties and failure in reading unless the teacher makes skillful adjustment to them. This the teacher is rarely able to do, either because she does not recognize the handicaps, or does not know how to take them into account, or, because of the large number of pupils in the room, she is unable to do so. Although there has been, within the last six years, a disposition to exaggerate the importance of certain rather striking characteristics such as left eyedness or mixed lateral dominance, or a lack of cerebral dominance, it is unquestionably true that many constitutional limitations contribute to a greater or a less degree to the difficulties in learning to read. A National Committee, now reaching the final steps in preparing the manuscript of a

Yearbook on Reading, has reached the conviction that, if the dire effects of reading failure are to be eliminated, it is necessary to introduce into American schools a comprehensive examination of the children at the time of entering. This examination should include tests of the several factors mentioned above and others. Although such a plan would require additional school officers and facilities, it is believed that it will result in a great net saving in the total cost of education, not to mention the avoidance of enormous social wastes which result from school failure and personal maladjustment.

Included in the examination of pupils on entering school must be tests of various abilities, interests, and skills essential for learning to read successfully; for example, ability to speak the English language, to comprehend typical stories and paragraphs, to know the meaning of typical primer words, to use common objects, such as books, pencils, chalk, scissors and the like. The acquisition of these abilities and interests prior to entering school varies greatly among children. In typical schoolrooms a rather fixed and rigid program is introduced which is too difficult for many pupils lacking average educational opportunities and incentives. Failure to develop some of these phases of "reading readiness" or preparatory interests and skills may be a sufficient cause of reading failure.

It is always misleading to say that reading failure is caused by a particular constitutional deficiency or the lack of a particular interest or ability. The cause of reading failure is always failure to adjust materials and methods of instruction effectively to the needs of a particular individual. Thus, the pupil who is hard of hearing may fail to learn to read if his difficulty is undetected and he is placed in a noisy rear corner of the room, whereas, if this pupil is given a front seat and other advantages, he may learn to read normally. A pupil coming from a poor home in which he has had little contact with English may fail to learn to read in a typical class, but, by giving him certain preparatory language experiences and special supplementary reading materials and activi-

ties, he may learn to read rapidly and soon catch up with others of his intellectual level.

It is therefore necessary to consider as factors contributing to reading defects certain characteristic features of typical schoolroom organization. The large size of typical classes is a feature which makes adaptation to individual needs difficult. Confronted by forty-five pupils with a diversified constitutional equipment, with very different habits, skills and interests, even the most skilled teacher finds it difficult to learn all that she needs to know about her pupils and to make adjustments to them. As we study the requirements of materials for beginning reading, we learn, furthermore, that the typical classroom is woefully deficient in the amount and kind of materials needed to enable every child to learn to read successfully. For example, recent experiments have shown that pupils with I. Q.'s ranging from 5 to 95 need material providing 150 or more running words to read for every new word introduced. Many classrooms have a quantity of material which provides fewer than twenty running words for each new word. The result of this is that pupils are continuously struggling with material which is for them extremely difficult. The task of making up sufficient supplementary material as she goes along is more than one could reasonably expect a teacher to achieve. Typical classrooms, furthermore, have far too little of the modern types of teach-and-test material which is needed for successful teaching in large groups. One of the causes of failure in reading is the inability of the teacher to determine daily how well the pupil has mastered an assignment and what difficulties, misunderstandings, and confusions have appeared in his work. If the latter are not recognized, they carry over to increase the difficulty and confusion of succeeding lessons. Thus, out of a small misunderstanding, momentary confusion, or failure to acquire particular groups of words, or techniques, gradually develop serious difficulties. A greatly increased supply of self-administering and self-diagnostic material would help

enormously to improve reading instruction. It is upon materials of this type that the successful remedial reading instructor depends to a large extent. In the New York City project, for example, one of the large tasks was the preparation of additional materials of all types, especially the self-administering and self-diagnostic form.

Reading disabilities spring from defective instruction, such as failure on the part of the teacher properly to demonstrate to the pupil the necessity of always observing a word from left to right. When a pupil first begins to read, he does not realize that a word is perhaps the only thing in the world which must always be observed in one direction. Faces, small objects, wallpaper patterns, diagrams, pictures, almost all other things, can be as readily perceived by observing them from up to down, right to left, or in miscellaneous ways, as in the left to right direction. Habits of observing objects in all sorts of directions are carried over in the observation of words, but here they do not work, and, unless the pupil is given special guidance in forming specific habits of observing words in the right direction, he will later reveal reversal errors, such as calling was, "saw," and other types of mistakes. The deficiencies in teaching techniques are partly due to ignorance and incompetence and partly to the preceding limitations, namely, the large number of pupils in the class and the dearth of printed materials.

At the higher grade levels the causal factors are, in general, much the same. To these must be added the tendency of children to habituate a performance on a certain rather easy level. Thus, a pupil, having learned to read at the rate of about 80 words per minute, is disposed to habituate that speed in order to achieve ease and comfort unless some special incentive for increasing it is provided. In many schools no such incentive is introduced. The majority of adults and high school students, for example, have no idea how many words they read per minute. Pupils have gone through schools without ever having had the question of their speed

of reading raised. Some represent instances of habituating a third or fourth grade technique and continuing to work with it. To avoid the formation of order habit levels and to detect factors other than mere habituation which may have been responsible for failure to achieve higher competence in reading, it is necessary to analyze the equipment of pupils at intervals throughout their school career. Devices for this purpose have recently been developed. They take the form of a diagnostic inventory. Such an inventory may include from 30 to 50 very short tests, observations and examinations which are designed to provide a canvass of most of the techniques and skills involved in effective reading. An hour or two hours is sufficient for a skilled examiner to make a comprehensive survey of a typical case. This should be done once or twice a year for all pupils whose scores on standardized reading tests suggest retardation in reading. Some progressive teachers manage to give a brief inventory survey to substantially all of the pupils at intervals of not more than two months.

A special difficulty in handling reading problems beyond the first grade is the lack of permanent records of past achievements, difficulties, types of instruction, and other facts about the history of the case. A thorough diagnosis of a fourth grade reading case now requires several hours, primarily as a result of the fact that many data are needed and so few are available in the school records for interpreting the case. If a permanent record of progress in reading were available, instruction would be greatly improved and failures would be far less easily condoned. The National Committee on Reading is recommending most vigorously a program of permanent records for each pupil.

## REMEDIAL INSTRUCTION

Remedial instruction, at its best, consists in adapting materials and methods effectively to the needs and interests of a particular pupil. Since the needs and interests of pupils

differ widely, remedial instruction must take many different forms. For example, a particular third grade pupil may reveal special weakness in working out the recognition and pronunciation of words encountered in reading. It may also be found that he has a special inaptitude for handling the sound or phonetic characteristics of words. He does not readily think of words that rhyme or of words that begin with a common initial sound. He is very poor in fusing or blending a series of isolated sounds into a total word sound unit. Many pupils have been taught by the conventional phonetic approach, which was poorly adapted to them, to a point where any activity in dealing with the sounds of words produces tension and distress. For such a pupil, a program based upon a study of the visual characteristics of words, combined with a large amount of reading of very simple but interesting material, would be suggested. Another pupil may have similar difficulties with word recognition, but he may possess a special but undeveloped aptitude for the phonetic approach. Pupils are sometimes found who have been given practically no instruction in dividing a word into syllables and working out the recognition and pronunciation of words by syllabication. I have seen cases for whom a couple of hours of instruction in this technique proved to be of enormous benefit. The type of instruction to give an individual, in other words, depends upon the specific deficiencies in reading techniques and the specific constitutional handicaps which he may reveal. Careful diagnosis of both is the first step in formulating a program for remedial instruction.

Unfortunately, a number of rigid systems of remedial instruction have grown up within the last decade. Some of these are recommended for use with all cases without regard to the aptitudes and inaptitudes of the pupil. For example, on the Western Coast a program which depends largely upon the writing and tracing of words, with no phonetic instruction whatever, has been developed and has been quite widely used. In the Middle West, another program which is based upon

the translation of individual letters into sounds is prescribed for all cases. Still another scheme depends primarily upon the rapid exposure of individual words or parts of words in a Tachistoscope. The proponents of each of these and other policies point to the success of the scheme in a large percentage of cases as evidence of their fundamental soundness. The success of these plans depends upon the fact that they have been administered in individual face-to-face instruction and not upon the intrinsic merit of the program. When a pupil is given instruction alone, many advantages which could not be realized in the classroom are automatically brought into operation. For example, the teacher can tell whether the pupil is attending, whether he understood what he is to do, how successful he was in doing it, what special difficulties he has, whether to repeat the lesson or go ahead with the next assignment, etc. These factors alone are sufficient to enable many pupils to learn to read, despite the fact that the program is very poorly adapted to his particular needs. Obviously, much greater success and swifter learning would result from a program in which a pupil's special aptitudes are given full play along with the advantages secured from individual observation and instruction.

Individual instruction is, of course, expensive. During the two years and a half in which the New York City P.W.A. projects have been in operation, a variety of other plans have been tried. A highly successful plan is one in which the teacher meets each pupil alone until she has become well acquainted with him and has gotten him to a point where he can do a great deal of work by himself with the aid of self-administering and self-diagnostic material. At this point the pupil is grouped with one or two others and the group gradually increased to as large a number as the teacher can effectively manage. In the course of time this group may include 25 or 30 or more pupils. In the hands of a skillful remedial teacher very few cases fail to learn to read under this policy. Another plan is to group together from the

beginning from two to six pupils who are more or less similar in their needs and reading ability. When suitable materials are available, most children can be successfully taught. Another plan is to begin with larger groups (for example, as many as 25 to 35), in which pupils are provided with an abundance of self-directed material which they use as well as they can during the initial period of two or three weeks, while the teacher is spending some time daily with each member of the group. She can soon learn what pupils need the greater amount of attention and what ones can work fruitfully for extended periods by themselves. Such groups can be working on a similar topic, thus permitting various types of group enterprises, discussion and co-operative projects, although they may be working at different levels and spending part of their time on different types of remedial work. We have tried out experimentally several plans of this type. In general, the results are not quite so brilliant and a somewhat larger percentage of pupils fail to overcome some of the more serious limitations. When the plan is operated in such a way that the more serious cases can be taken separately for some individual work daily, the results are considerably better.

Almost any school can put into operation with its present staff some form of diagnostic and remedial program. In some schools this has been done by co-operative enterprises among teachers in which the teacher with the best equipment for remedial work is freed certain hours daily for giving special instruction to the problem cases from all of the classes. This teacher, after making a special study of the individuals and inaugurating remedial work, gives suggestions to the other teachers concerning special help that may be given in the regular classroom work. Frequently additional technical assistance can be secured from the school psychologist or expert in tests and measurement or a supervisor who has made a special study of the work.

In the upper grades and in the junior and senior high schools it is usually easier to organize a program for remedial instruc-

tion. For example, in the schools of Altoona, Pennsylvania, an excellent program was inaugurated by a teacher of English who had made a specialty of diagnostic and remedial work. She devised a program in which, co-operating with the teachers of various subjects, a period of an hour a day was freed for remedial work. During this hour, pupils were taken in groups and provided with special practice and self-diagnostic materials. The teachers of the other subjects followed the remedial teacher's suggestions for continuing the drive during the study periods in their field. For them suitable types of reading activities, tests of speed of reading, comprehension exercises, and other devices were prepared for use in the class study periods. Group work of this type was conducted for one term. Those who had shown considerable improvement during the term continued to work in groups and those who had not responded satisfactorily were given more detailed individual attention. During the academic year the group of retarded readers, who represented about 17 per cent of the total population, of grade nine, made an average gain of two years and four months in reading speed. Out of a total of 172 retarded readers, only three failed to gain the equivalent of as much as a full grade in reading ability. This program embodied instruction in written and oral composition in which similarly large gains were made. Whereas, at the beginning of the year, 165 students fell below the reading grade score of 7, at the end of the year only 2 pupils still remained below this point.

Where a large amount of individual instruction is possible, however, more rapid and thorough improvement can be secured. In the lower grades serious disability in reading justifies a school organization in which careful diagnosis and attention to the improvement of reading is provided for a period of time in a number of the classroom activities during the day. In the Speyer Experimental School such a plan was tried with a group of 25 reading disabilities and five classes of dull-normal children, I.Q.'s 75 to 90. The teachers were

provided with a fairly comprehensive diagnosis of the pupils made by some of my students and a group of well trained P.W.A. workers. In the remedial reading class, at the end of three months' instruction, the average gain in reading ability was equivalent to the normal gain in thirteen months. In the dull-normal groups the results in all except one class were similarly great.

Needless to say, the most brilliant results are usually obtained in individual instruction carried on by a person well trained in modern diagnostic and remedial procedure. Excepting children with I.Q.'s below 70, or those very seriously affected with obvious physical handicaps, I have never yet seen a case, however hopeless he might superficially appear to be, who did not learn to read reasonably well when diagnosed and given remedial instruction by a well trained person. The popular idea that there are pupils subject to word blindness or lack of cerebral dominance or to other constitutional factors which makes it impossible for them to learn to read, is a residual of earlier decades before modern methods and techniques were developed. Sometimes the most complete failures in the primary grades proved to be children who have no constitutional handicaps whatever. They merely represent instances in which the pupil has completely failed to understand the whole business or to know how to go about the task of learning to read. The more typical case, however, is one in which a combination of factors conspires to produce the difficulty. For example, if a pupil with a mental age of five and one-half years is introduced to a program that is fairly hard for a child with a mental age of six and one-half, and if he has a slight degree of astigmatism and a moderate hearing loss, and happens also to have been given a seat in the back of the room, and if he also had less than a normal amount of play with picture books, and limited encouragement to learn to recognize occasional words, like *go, stop, exit,* etc., he is quite likely to have considerable trouble and to become confused and unable to maintain the pace of the class. As he falls more

strikingly behind, he is likely to lose interest in the work, to feel tensions creeping over him when he attempts to do it, and to develop various types of unfortunate mental adjustments to the whole situation. A pattern of this general type is the typical serious reading failure or disability. It is a pattern which we are now fully prepared to diagnose and understand. Not only can the pattern be understood but methods of management are now clearly known. When they are put into effect, as may be done almost anywhere, failure in reading can be completely avoided. Except as stated above for certain very serious limitations, I doubt that there is a child anywhere that cannot be taught to read and who will not enjoy the process of learning.

ARTHUR I. GATES,
*Professor of Education,*
*Teachers College, Columbia University*

# A New Concept of Intelligence and a New Method of Measuring Primary Abilities

IN THE time at my disposal here, I shall try to answer briefly some of the questions that have been asked about factor analysis and about the application of factorial methods for isolating the elements of intelligence. I shall also describe some of the factors that we have found in the current tests of intelligence, and, finally, I shall show some lantern slides of a few of the tests for each factor.

The details of factor analysis cannot be described adequately without mathematical formulation, but it should be possible to describe the general nature of the problem, and this is what I shall attempt to do with special reference to the problem of discovering the fundamental or primary elements of intellectual endowment.

It has been a matter of general observation that people differ widely in endowment for different types of mental work, but the psychological test methods have not, until recently, given us any objective methods for appraising these individual differences with confidence. Very early in the experimental study of this problem, it was found that those people who succeed in one type of mental work usually excel also in every other type of mental work. In any collection of psychological tests that we give to a group of subjects, the tests are always found to be positively correlated. If several tests are so constructed that they differ radically in nature and content, we may find that their intercorrelations are nearly zero, but we never find significantly negative correlations between any pair of mental tests.

These experimental findings, with which every psychologist is familiar, have led to the search for that elementary trait, or those elementary traits, which all mental activities seem to have in common. This has set the direction of psychological test investigations, and it is only natural that this

direction should be followed since very diverse mental activities seem to be positively related.

The same results are obtained if we study the school grades of students. Our personal knowledge of individual students would lead us to suspect that some of them are gifted for certain subjects in which others are deficient. When we study the relations among school grades, the results are similar to the psychological test results. Those students who excel in one subject are usually superior in each of the other subjects. School grades are positively correlated. These are well-known facts which have been established so many times by different types of analyses that it is no longer profitable to debate that question.

But we are interested in the exceptional students who appear in the negative quadrants of the correlation table. We do find occasionally a student who excels in language and who is inferior in mathematics, but we must not forget that these are exceptional cases. If we tabulate all the students who excel in language, we find universally that their average grade is above the average in mathematics and in every other school subject. But the exceptional cases lead us to suspect that the positive correlations among psychological tests and among school subjects may have to be explained in some other way than by a single, central, intellective factor. It can be easily shown that the positive correlations among the various psychological tests can be explained in terms of a set of independent abilities, no one of which is in any sense universal or central. Multiple factor analysis makes no assumption as regards the existence of a central intellective factor. We can leave it as a matter of fact whether there exists a single factor or ability that can be called "general intelligence."

The factorial methods have revealed the existence of a number of primary factors of mental endowment which are uncorrelated. I am frequently asked how it can be physically possible for school grades, or test performances, to be correlated when they are composed of mental elements that are

uncorrelated. Since this is so frequently asked, I shall start with this aspect of the problem and attempt an explanation. Let us suppose that there are ten or twelve uncorrelated abilities. This means that those who excel in one may have any rank in the others. Now any school subject, or any psychological test, is composed of a number of these primary elements. It is hardly possible that any psychological test, or school subject, is a measure of only one of these elementary abilities. Let us suppose that a certain task is composed of elements 1, 3, 4, 5, and that another test demands the elements 4, 6, 8, 9, 10. These two tests would have at least one element in common. If the tests are complex functions of the elementary mental abilities, it will usually happen that they have at least one element in common, and perhaps more often several. Thus it happens that the test scores are correlated although the primary abilities of which they are composed are uncorrelated. The greatest difference that can be obtained between two of these tests would be a zero correlation. That would be the rather unusual case, in which two tests do not have any of the fundamental elements in common. We assume, generally, that abilities do not enter negatively into the tests or school subjects. According to this assumption, any particular ability that we possess does not actually detract from our performance. An ability may be entirely extraneous to a task but we assume that the abilities do not enter negatively into any mental performance.

We can conceive situations in which an ability might make a negative contribution to a test performance, but it would be generally agreed that such effects are rare. In any event, such influences would be over-shadowed by the positive effects of the abilities that are involved in any particular test. According to this line of reasoning, one or more of the mental elements may, or may not, be common to all mental activities. We can leave it as an open question whether or not there exists a single factor of general intelligence. These considerations give us the general setting for the factor problem.

Factor analysis starts with the assumption that any particular test performance is a linear function of primary elements. We make no assumption as to the number of elements involved in any particular test. By a linear function we mean that the test performance can be expressed as the weighted sum of the contributions of primary mental factors. The weights are essentially characteristic of the tests, and the mental factors are essentially characteristic of each individual. A particular test performance depends then on two sets of factors, namely, (1) the extent to which each ability is demanded by the test, and (2) the extent to which the individual possesses each of the abilities.

If we have a group of 100 subjects who have taken 50 tests, then we have 5,000 test scores to analyze. In factor theory, a table of these scores is called a "score matrix." The next step in the analysis is to determine the degree of relationship for every pair of tests. This is given by the correlation coefficient. A table of intercorrelations of the tests is called a "correlation matrix" in factor theory, and it is usually the starting point for a factor analysis.

The first question is to determine the smallest number of factors that must be postulated in order to account for the given intercorrelations. It can be shown that the number of factors is equal to the rank of the correlation table. The rank is a mathematical property of a rectangular table of numbers. It is of considerable interest to realize that, with a given table of intercorrelations of tests, we can determine how many factors are involved before we have any idea what the factors are like.

The object of a factor analysis is, of course, not only to determine the number of factors in a test battery, but also the nature of each factor. We also want to know what part of the total variance of each test is to be attributed to each factor. At this point a very interesting indeterminacy appears which seemed for a while to stop the possibility of a unique and meaningful solution. I shall try to illustrate the nature of

this dilemma by a simple geometrical interpretation of the problem. Let us assume, for simplicity of this example, that there are only three factors involved in a test battery. Then the matrix of intercorrelations would be of rank 3. This table of intercorrelations defines uniquely a configuration of tests in three dimensions. As soon as the intercorrelations are known, a model can be constructed to represent the test battery, if there are not more than three factors involved. Factorial analysis can be extended into any number of dimensions, but the model cannot be constructed in more than three dimensions. A model can be made by sticking some hat-pins into a small cork. The only requirement in constructing this model is that the correlation between any pair of tests, A and B, must be equal to the product of the lengths of the two corresponding hat-pins and the cosine of their angle of separation. It can be demonstrated that if the test battery contains at least six tests, and if there are only three common factors involved, then it is always possible to make a model of this kind. Furthermore, under these conditions there would be only one model that can be constructed for the given table of intercorrelations. A test which has much in common with the other tests of the table would be represented by a long hat-pin. A test which is unreliable, or one which has very little in common with any of the other tests in the table, would be represented by a short hat-pin. If two tests are nearly identical in mental constitution, then the two corresponding hat-pins would be close together in the model. If two tests are so differentiated that they have no mental elements in common, then their correlation is zero. The two corresponding hat-pins would then be at right angles in the model. If two tests could be found which correlated negatively, then the two corresponding hat-pins would diverge at an obtuse angle. Such a situation occurs in dealing with personality traits, but not with intelligence test. This geometrical interpretation of the problem appears as a very natural way of visualizing the algebraic development of the fundamental postulates.

Since all psychological tests correlate positively, and since the lowest inter-test correlations approach zero, we should expect to find that the hat-pins in the model take the shape of a cone. The maximum angular distance across this cone will be 90 degrees. But the majority of the hat-pins are separated by acute angles that are considerably smaller than a right angle.

It is of some interest to compare the correlation table and the model. All of the information in the correlation table is represented in the model. If I should hand you a model of this kind, you would be able to reconstruct the correlation table by the simple rule by which the hat-pins are related.

The next objective is to describe each one of the tests in terms of the three primary mental abilities that are known to exist in the illustrative battery. These primary abilities would be represented in the model by the co-ordinate axes. But the model can be constructed uniquely from the inter-correlations without specifying any co-ordinate axes. We already have the model but it has no co-ordinate axes. We can put the $x$, $y$, and $z$ axes in this model in the form of three additional hat-pins that we might represent by a different color to distinguish them. The mathematical indeterminacy of the factor problem is that the co-ordinate axes can be put anywhere we please in the center of the cork. If we adopt any particular frame of co-ordinate axes and if we name the axes by letters or by psychological names, then we can describe each test in terms of its projection on each of the three primary axes. But such a description would not be of any scientific interest because we are using an arbitrary set of axes or reference traits.

My first attempt to solve this problem was to find a mathematically unique solution in terms of the principal axes of the configuration. There was a certain satisfaction in finding this mathematically unique solution because it takes a rather neat mathematical form. I used this method in one of my first studies, but I had to discard the solution when I realized

that the factorial description of a particular test could be altered arbitrarily by inserting it in different test batteries. The mental abilities involved in a particular test would then depend on the tests that I would give the same subjects perhaps next week, and which I, as the investigator, might incorporate in the same battery. We found it necessary, therefore, to discard a mathematically interesting solution because it gave results which were scientifically and psychologically absurd.

As long as we looked at the problem in a formal and mathematical way, there seemed to be no unique solution because the reference frame of the three co-ordinate axes can be attached to the central cork in the model in an infinite number of ways. The solution that we have found can be stated mathematically, but it did not occur to us as long as the problem was stated only mathematically. The indeterminacy seemed clear enough when mathematically stated, and yet it seems equally clear to scientists that a particular set of primary abilities may nevertheless exist. I puzzled over this problem for several months until it occurred to me that a unique solution could be found by taking advantage of psychological and scientific considerations as distinct from the merely formal and mathematical statement of the problem.

Let us now look at the problem with a few simple psychological considerations in mind. Let us suppose that there exists a set of primary abilities such as, for example, verbal facility, vocabulary, number facility, ability to visualize, ability to memorize, ability to rhyme, etc. Let us turn to a battery of psychological tests and examine each of the tests. If mental performances are to be differentiated markedly by various abilities that they demand, then we should hardly expect that a test of synonyms would demand number facility and the ability to visualize. On the other hand, a test involving riders in geometry would probably not demand either vocabulary or verbal fluency. Certain types of geometrical construction might not even call for any number facility.

Here we are dealing with a second application of the universal principle of parsimony in science. First we wanted to know the smallest possible number of factors that would account for the intercorrelations of the tests. Now, having determined that a battery as a whole contains, let us say, ten factors, we are led by psychological considerations to demand that the ten factors be so chosen as to reduce to a minimum the number of factors that are significantly involved in each one of the separate tests.

Returning to the simple three-dimensional model with the hat-pins, we are now asking that the reference frame of the three co-ordinate axes be so placed in the central cork that, as far as possible, each hat-pin lies in one or more co-ordinate planes. We have now resolved the indeterminacy by stating in mathematical terms a few simple psychological considerations. When the reference frame of the co-ordinate axes can be placed in the test configuration according to this principle of minimizing the number of factors for each test, in addition to minimizing the number of factors for the battery as a whole, we describe the result as a "simple configuration or structure."

There is no guaranty beforehand that a test battery will show a simple configuration. If we start with five or six tests which demand as many factors as there are tests, then we cannot construct a unique configuration at all. Then we never even reach the indeterminacy of the co-ordinate axes. The successful application of the factorial methods demands that we start with a test battery of many more tests than there are factors. But this is no new restriction in science. This restriction is universal in all science, namely, that in order to demonstrate the plausibility of a hypothesis it must be considerably overdetermined by the experimental data.

Let us now turn to the numerical form of the solution which we must have for practical purposes as well as for convenient scientific discourse. The numerical description of a simple configuration consists in the statement that the total

variance of a particular test contains so much of ability number 1, so much of ability number 2, etc. When this information is summarized in the form of a table, we call it a "factorial matrix." Such a table shows the factorial constitution of each test in the battery. The characteristics of a simple configuration, which we have just discussed geometrically, can also be stated numerically in the demand that the co-ordinate axes shall be so placed as to maximize the number of zero entries in the factorial matrix. This matrix is the first principal objective in a factor problem.

There remains the final step in factor analysis. We are, of course, interested to discover that a certain number of factors are required by each of the separate tests, but the practical objective is the appraisal of each individual person as regards his primary abilities and traits. If we have a person's score in each test of the battery, and if we know the saturation of each of the abilities in every one of the tests, then we can compute in a rather simple way the standard score of each person in each of the primary abilities. The accuracy with which this can be done can be estimated by the known saturation of the abilities in the tests and by the number of tests that represent each ability. This is the practical objective for educational and vocational counseling.

Two years ago we devised a new set of psychological tests that represent quite adequately the tests that are in current use. These tests involved fifteen hours of testing, which was completed by 240 volunteers. There were 1,540 coefficients in the correlational matrix. These intercorrelations were analyzed to twelve factors, which seem to be sufficient to account for the intercorrelations. A great deal of work has been done in trying different methods of rotating the configuration into a simple structure. As the successive axes have been determined, it has been of psychological interest to inquire about the nature of each ability, so that we have identified seven primary abilities with some confidence. We have hypotheses about the psychological nature of several addi-

tional factors that are not conspicuously present in our battery. The psychological identification or naming of each factor is done in terms of the tests which are heavily saturated with the factor. Most of the factors that we have identified have appeared in previous studies by Kelley, Spearman, and others, in the form of group factors. This added to our confidence in their identification because several approaches to this problem that differ in technique seem to be in agreement as regards the nature of the factors. It was not until quite recently that it became possible to appraise the abilities of each individual by factorial methods.

A preliminary report of this study has been published in *Psychometrika*. I shall illustrate here by lantern slides some of the tests that have large saturations with each factor, and I shall describe our efforts to identify psychologically the nature of each factor.*

The factors that have been identified in this study are nearly uncorrelated. By this we mean that their intercorrelations are near zero, with one conspicuous exception. The abilities are essentially uncorrelated except for visualizing and number. This intercorrelation is about .40. These two abilities are so sharply defined that it is not likely that this intercorrelation is due to a chance variation.

By these tests it is now possible to describe each individual in terms of at least seven indices which should replace the intelligence quotient, mental age, and other gross scores of general intelligence. The material that we have used for this analysis is typical of the content of current intelligence tests, and we have seen that these tests break up into psychologically distinct elements that we have tried to characterize. Each individual should be described in terms of a profile of mental abilities instead of by a single index of intelligence.

---

* The illustrative slides shown on the screen and discussed at this point are regretfully omitted because of space limitations, and because no record of the oral explanations is available.

It seems that a mental profile of each individual will be more helpful in educational and in vocational counseling than the single composite intelligence rating that has been in current use for many years. I do not mean to imply that the intelligence ratings are useless. On the contrary, they are very useful, but we can now describe mental endowment more accurately in terms of several independent factors or primary abilities.

The 240 subjects who volunteered for this study, in which seven primary factors have been identified, were an unusually superior group of university students. We have determined the weights for these tests for each primary ability for these students. Before releasing the tests for general use, it is essential that the system of saturation weights be verified on younger populations that are not so highly selected. We do not yet know to what extent the saturation weights may be influenced by the selection of the subjects. It is conceivable that the weights for the various tests will change for different age groups. This question must be answered before the tests are released for general use in the schools. This is the problem on which we are now at work, and some evidence on this question should be available next spring.

A further refinement in our comprehension of each one of the primary abilities should be studied in special experiments which must be devised for each factor. For example, the six memory tests in our battery behave as though memory were a single factor. There is some indication that one of the residual factors involves some form of recognition as distinct from rote memory recall. There is also the possibility that ability to memorize rote material is distinct from unintentional memory. It is conceivable that a man may be able to memorize when he sets himself the task to do so, while he is unable to recall the detail of recent experiences. These questions demand special experiments in which the tests are set up so as to represent the various types of retention in a conspicuous manner.

Two verbal factors have appeared. In order to study further the exact limitations of each of these factors, we must set up special experiments in which each one of these factors is involved in predetermined ways. A subsequent factor analysis will then reveal which of various detailed interpretations is the correct one.

I can illustrate this procedure in terms of an example. When we were trying to interpret one of the verbal factors, it occurred to us that perhaps it could be characterized as an auditory factor in which the subject dealt primarily with the sound of words as distinct from their logical meanings. If we had seriously entertained such a hypothesis, then we could set up an experiment including these tests and also some tests that are conspicuously auditory in character. If the factor analysis should place this particular verbal test in the same column with the conspicuously auditory tests, then the hypothesis would be sustained. On the other hand, if the auditory tests should add a new factor with low saturation for the verbal tests, then the hypothesis would be disproved. In this general way we can answer many fundamentally psychological questions experimentally and we can avoid much fruitless debate.

The perceptual factor should be studied experimentally in relation to psychological experiments in order to ascertain whether the perceptual factor is limited as to modalities. In general, I believe that the most fruitful results will be obtained in factorial studies if the tests are made as simple as possible so that each test involves a very small number of primary factors.

The separation of the various types of reasoning tests into two groups is of great psychological interest. We have tentatively identified these two factors as induction and deduction. The test battery was not primarily set up for this type of classification. This lead should be followed out by further experimentation with tests that are devised especially to feature induction or deduction in so far as they can be separated

in psychological tests. So far the indication seems to be that some people are superior in inductive reasoning without being superior in deduction, and vice versa. This seems to be psychologically plausible, but it is not at all unlikely that these particular names will be revised in the light of further experimental study.

The appearance of a number factor of narrow range is interesting in view of the fact that the numerical processes are in large part determined by social convention. It might happen that the primary ability that is heavily saturated in the simple numerical tests is not really numerical in character. It may be that the factor is of broader range, but that it made its appearance in this particular test battery in the number tests. As far as we can tell from present results, the factor is sharply defined in tests of the simple numerical processes. It remains for further study to ascertain whether the factor is definitely limited to number or whether it is something more general, of which the numerical processes are excellent examples.

The visualizing factor is very clear in our results, but we cannot yet say with confidence whether the ability to visualize flat space is different from the ability to visualize in solid space. Our experimental results show no separation between these two types of tests. On psychological considerations one might question whether kinesthesis also represents one or more primary abilities, as we have seen in the case of visualizing. This is a question of fact that can again be answered on experimental bases. It would be necessary to include tests that involve various forms of kinesthetic imagery. It may be difficult to separate visualizing completely from kinesthesis, but tests can certainly be devised which emphasize one and minimize the other.

This problem also suggests the industrial and vocational possibilities of a factor analysis of various forms of manual skill. It is quite likely that manual skill is composed of contributions of various primary factors that can be isolated by the same methods.

Some preliminary tabulations have been made of the vocational interests of the subjects of our experiment. There are rather clear lines with occasional striking differentiation. For example, I found a mental profile of one of our subjects with a conspicuously high score in visualizing and average scores in the other abilities, in comparison with a superior group of college students. I turned to the vocational interest schedule for this subject, and I found that his first vocational choice was to be a cartoonist. In the interpretation of vocational interests, I have found it necessary to study the profile of each man rather than to compare him in each ability with other students. For example, one student was below the average of this superior group in all of the seven primary abilities, and yet he gave mathematics and physics as his first choice. By referring to his profile, I discovered that, although his scores were all below the average of this particular group of subjects, his relatively highest scores were in visualizing, number, and induction. The students who chose literary occupations or journalism were invariably high in the word fluency factor. This type of comparison between the profiles of individuals and their vocational interests deserves a great deal of careful study.

One of the most interesting scientific problems in this field is to ascertain the extent to which the primary abilities are inherited and to what extent they are socially determined in relation to interests. If some of these primary abilities are determined largely by inheritance, we must work with the geneticists on human inheritance.

Another type of exploration must be made to ascertain the growth curves of each primary ability. It is conceivable that some primary abilities mature earlier than others, and that some of these primaries may be identified in young children. It might even be possible to diagnose some of the primary abilities of first grade children. It is not inconceivable that differential methods of instruction in reading should be determined by the mental profiles.

I have sketched the general nature of the factor problem in so far as it can be described without mathematical formulation, and I have described the principal findings in an experimental study with psychological tests. We feel quite certain that seven of the primary abilities have been isolated with sufficient certainty to be of practical use in educational and vocational counseling. We should not commit ourselves about the total number of primary abilities. There may be hundreds of primary abilities, but it is my belief that a chart list of the socially most important primary abilities will be adequate for most educational purposes, and it now seems likely that in a year or two practical methods for appraising some of these abilities will be available.

L. L. THURSTONE,
*Professor of Psychology,*
*University of Chicago*

# Rural Education and the Teacher

COUNTRY life is beginning to get attention and interest in America unequalled since colonial days. Rural schools are receiving thought and planning that they have not had since that remote period when the little red school house was a term of praise.

For a century and a half American life and American ambition have followed a strangely contradictory course. While our territorial history has been the conquering and cultivation of ever new and greater lands, our economic and cultural interests have been increasingly urban and industrial. The new nation came into being just as the industrial revolution was getting into full swing. We grew up with the machine age. Our national history is contemporaneous with the marvels and efficiencies of mechanics and organized industry. So while we kept swallowing up huge new territories—the Western Reserve, the Mississippi Valley, Florida, Louisiana, the Southwest, the Northwest, California—our interest really has not been in land but in machines. Today, although this nation spreads over the better part of a whole great continent, over half our population is classed as urban—that is, living in cities and towns of over 2,500. But much more than in mere residence, our interests and our ambitions have centered in city life and in industry.

The school has been one of the strong factors in this urbanizing trend. As children climbed the educational ladder, they moved from the local common school to the high school, which was usually in a larger town, and to the college or university, which was almost always in a sizeable city. The literacy subjects, which are the body of the school course, naturally turned the child's interest during the most impressionable years away from handwork, agriculture, and the local scene. The wealth of educational material in nature and in the human struggle, which is all about one on the farm, have

been almost entirely neglected in the school curriculum, with the result that the procedures of country life have held neither the interest nor the prestige that comes from recognition by the school. The curriculum has been set by educators who, in so far as they are influential, are almost always working from the strategic base of city office; it has been administered by officials living in the capitals of the various states. Teachers have been trained in colleges or normal schools, most of which have been in cities. In the teaching service the lines of promotion, both in money and in prestige, have run from the country to the city. The rural school has slavishly aped the city school in routine and formal drills. These formalistic schools have been as active as any agency in carrying children's attention and ambitions from the country to the city.

All that is beginning to change. I do not claim that any spectacular movement back to the soil has set in. Even during the depths of the depression there was no mass migration back to the nourishing bosom of Mother Nature. Mechanical invention still continues; industrial efficiency proceeds; the labor-saving devices of machinery and mass production are steadily developing. And no sensible man can regret the advances which make it possible for more and more necessities, conveniences, and luxuries to be produced so that greater numbers of the total population can share in this enlarging wealth. But the peak of urban glamor seems to have passed. Even though the development of the machine will continue and increase, the adulation of industrialism as the be-all and end-all of human life has passed its zenith.

The present trend is not so much back to the country as back to a regard for humane living as contrasted with exclusive devotion to making a living. In this fresh regard for the content and quality of life itself, country life takes its place on its own merits, not necessarily above tenement and apartment living in cities, but simply as one of the potentially satisfying ways of life. It isn't that rural life is being made a cult—God forbid. It is simply that the cult of urbanization and indus-

trialism has ceased to hypnotize. Freed from the treadmill of slavery to money as contrasted to real wealth, with eyes no longer blinded by the garish neon lights of "success," with a little mitigation in the mad rush to keep up with the Joneses, the satisfactions of life in the country are now receiving sympathetic and realistic attention. The rural school no longer need think of itself chiefly as a means of training for success in the city; it can concern itself with the problems of rural life and with education as a means to richer and fuller living in the country.

Before suggesting the revisions that seem necessary, let us remind ourselves of what the rural school is. Even educators easily forget or sentimentalize the humble institution which used to be called the little red school house. The school throughout rural America is still in most cases a one-room or two-room building with one or two teachers—almost always women—drilling children from the ages of six years to twelve or fifteen years in all the subjects listed in the first three to eight grades of our public school system. It is true that consolidated schools are steadily increasing and are to some degree supplanting the little ungraded schools. But in such states as New York and Illinois, as well as in much of the South, the countryside is still supplied by more one- and two-teacher schools than by all the modern consolidations. And, as a matter of fact, there are certain arguments in favor of the smaller school. It is cheaper, since it does not involve the huge expense of transportation which has run up the costs of consolidation. And—much more important—the school is or may be an important influence in the rural neighborhood. When local district schools are wiped out by a consolidated institution, the children may get more efficient instruction, but the local neighborhood loses its once social force.

These little rural schools spend their time almost entirely in routine drills in the literacy subjects and in rehearsing scholastic fragments of history, civics, geography, and other formal lessons. They are taught by women who, for the most

part, are in rural schools only because they have not been able to get jobs in the better paid and more attractive city schools. The officials, in the form of county superintendents or rural supervisors, are often chosen for their political standing rather than for their competence or their interest in schools. The district trustees—an antiquated political organization which still persists in many rustic regions—are often a burden rather than a benefit to the educational process. In the state of Illinois there are today more educational officers—chiefly district trustees—than there are teachers in the whole school system. Incompetence, formalism, poverty, lack of prestige are characteristic of what should be the most vital unit of our whole educational program.

In the South in my youth we used to call the local committee "the Deestrict trustees." And the measure of their learning was illustrated by this story. The Deestrict Committee one day went on its annual pilgrimage to "visit school." Entering the classroom, of course they threw the teacher and the pupils into a dither of self-consciousness. But, trying to carry on and hoping to make a showing, the teacher called one boy to the front and asked him, "Who signed the Magna Carta?"

The boy stammered and rubbed one foot up and down the shin of the other leg.

"Come, come, James," said the teacher, "surely you know the answer. Who signed the Magna Carta?"

Finally the boy blurted out, "I don't know. I didn't do it," and, rubbing his eyes, started back to his seat.

But one of the Deestrict trustees leaned forward and shouted: "Teacher, call that boy back. I don't like his face. I'll bet he done it."

The conditions of the average rural schools, the lack of educational facilities and educational impetus which mark them, can be believed only if one visits them and studies them. My grandfather, who was a very godly man much interested in theology and religious rites, once asked a chance acquaint-

ance: "Do you believe in total immersion?" and received the astonishing reply, "Believe in it? Hell, I've seen it done." Only by seeing can one believe in the uneducational conditions which today surround the rural school.

The fortunate thing—the best evidence of the rural renaissance—is that a good many people are now studying the country school and taking an interest in transforming it from formal routine into an instrument of education and of social enrichment. One of the agencies which is especially active is the Council on Rural Education established and financed by the Julius Rosenwald Fund for work in the rural schools of the South. This is only one of many fresh forces. The Progressive Education Association is turning a part of its attention from the education of favored children in private schools to reform in the public schools for all the children, including the rural children. University departments of education are viewing again the primary school and the education of the rural child. Individuals of fine attainments are voluntarily leaving the higher schools and the towns to devote their efforts to making the rural elementary school a vital force in American life.

All who are working on these rural problems agree that the country school must break away from scholastic tradition, that it must plan its work afresh on the basis of what is sound education for the rural child and sound influence for the rural community. They also agree that in planning new programs we must always keep in mind what is feasible in the light of present conditions or of improvements which may be reasonably expected. We must remember that today and for many years to come we must get along with fairly mediocre teachers and with fairly low levels of support. It is proper, of course, to aim at higher standards but it is nonsense to set up models which are clear above possible achievement in the average rural community. Here many professional educators fail. They insist on planning ideal programs to be carried out by brilliant and resourceful teachers with ample support from

enlightened communities. That is silly. And a few of the wisest of the professors of education are beginning to recognize conditions as they exist and to plan with some regard for reality. If one is to influence rural education over any wide area he must simplify procedure so that it can be understood and applied by common people; he must plan his programs so that they can be built upon existing human and material resources.

The purpose of education is to develop the individual and to fit him for happy and useful living in the society and the environment in which he will make his life. What are the essentials of preparation that children need for successful rural living under modern conditions? Five items stand out.

1. The ability to read (and write) clearly and understandingly.
2. Some skill in the use of figures.
3. Knowledge of farming, including some general understanding of biological processes and an appreciation of nature.
4. Manual dexterity, especially in the handling of wood, fabrics, and other materials, and in simple mechanics.
5. Health.

These are self-evident necessities for any successful life in the country. It seems naive to argue the need of education in such obvious items. But the simple fact is that rural children are not getting from their schools anything approaching adequate preparation in these fundamentals.

Reading is, of course, the first commandment even among the basic three R's. No one can live as a competent member of modern society without this essential tool. If a child can and does read he can care for the rest of his education by his own efforts. The difference between educated and uneducated people is almost entirely the difference in the range and understanding of their reading. Abraham Lincoln was one of the best educated of men in spite of meager schooling—because he read so avidly.

Schools—rural or urban—need take no credit for educating their pupils until this essential of learning to read is fully achieved. Almost the whole of the elementary school may be regarded as practice in reading. And reading, by the same token, should not be thought of as a "lesson," something to be had from a special class or a special set of textbooks, but as the means of mastery of all the subjects and projects which make up school life—and all life. The fundamental task—ill done in present schools—is to enable the child to learn to read.

Expression in written and oral language is the obverse of reading. It is a part of the process of gaining acquaintance and competence in the use of that amazing social tool—one of the most important inventions man has ever made—the communication of ideas by words. Penmanship and spelling are among the mechanics of writing; the ability to express one's self clearly and effectively is a higher aspect of the same process.

Ability to deal with numbers and figures is another of the essentials of modern life. The place of arithmetic in the school program needs no argument. It may be pointed out, however, that the goal is not knowledge of special traditional tricks of formal mathematics but a general understanding of the concept of number as a tool, together with skill in handling the usually very simple problems of everyday life. The task of arithmetic is really very easy if teachers would only set themselves to it. It is also very important, but this importance has to do with real life, not with a lot of crossword puzzle work, however hallowed these puzzles may be by history and tradition.

The remaining subjects on the list fall into another class. They are recognized as needed preparation for living, especially in the country. But they are not generally recognized as a part of school work. Yet if we think of education as the leading out of a child's capacities, as the development of him to be happy in himself and effective in his community, we

must plan not in terms of traditional school disciplines but in terms of what the child needs as preparation for his life.

I am not urging farming and manual training as vocational subjects. The education here should be just as general as that in reading or arithmetic or other present school subjects. Agriculture and manual dexterity should be learned just as practically as writing or figuring but also as broadly and generally as any so-called academic subject.

An understanding of farming carries one as far as he cares to go in the study of nature and of biology, yet it has all the interest of life and the making of a living, all the definiteness and concreteness of specific tasks in planting, breeding, cultivating, and harvesting. No one can deny the influence upon modern life of skill in bending nature to our needs; no one can deny the rich field of learning in the general and special study of nature. If the school has not yet organized these rich and living topics so that they can be readily acquired by pupils, it is high time it did so. With all due modesty I suggest that an exact knowledge of how to manipulate corn and cows and honey bees is even more enlightening (as well as more useful) than intimate acquaintance with the vagaries of least common denominators, lists of the Kings of England, or other traditional tricks of the schoolmaster's trade.

Manual dexterity is equally necessary to the country boy. It is not merely that he be enabled to mend a broken chair or tinker with an automobile—important as these are—but also that he be given an outlet for creative work in making objects both useful and beautiful. This is not a suggestion that we repudiate machine production and return to a handcraft economy. But machines and hand skill should supplement each other. Much furniture, building, decoration, and clothing can be made more beautifully by hand than by any machine, and much more cheaply for the man who makes them. The person who can use his hands with a master's skill in building a house, painting a picture, playing the violin, or weaving cloth has a means of expression that is about as

nearly godlike as a human being can achieve. He also has a pretty sure foundation for making a living.

In connection with these arts of living, of course, attention will be given to the home as well as to the farm. Cooking, dressmaking, and housekeeping are natural partners of carpentry and planting.

Health is a more difficult subject for the school. The laws of bacteriology and physiology which underlie disease and the protection of health are so intricate as to be beyond the grasp of children. Furthermore, protection against the great contagions often requires public rather than private action.

Yet health is so important to any sort of robust living that every child should have some knowledge of its basic laws, some competence in protecting himself and his companions from the commoner diseases. This is especially true in the country, where public sanitation is apt to be less developed than in cities and where the struggle against disease is more nearly an individual or family matter. Some acquaintance with proper balance in diet is also essential, for, in spite of the supposed presence of nourishing and wholesome foods on the farm, rural eating is apt to fall into meager and ill-balanced patterns. Since poor country diet often results from the absence of diversity of crops, health and gardening become supplementary subjects. At the moment health is probably the most unsatisfactory of all school courses. Anyone who can devise good courses, stimulating projects, and wholesome procedures for the school in this topic will be a public benefactor.

These five subjects I submit as the essentials of the elementary school in a rural district. If children gain competence in these, they may live happily and successfully. Surely the learning of five broad topics is not too much to expect from the six to eight years of the common school. The reason these, or any other subjects, are not mastered is that the school attempts to cram a great multitude of lessons into the brief days. A plethora of "subjects"—artificial fragments of

knowledge—are "required" in the elementary course: reading, writing, spelling, arithmetic, geography, history, civics, physical exercise, hygiene, literature, shop work, often a whole series of specialized hand drills, such as sewing, carpentry, cooking, mechanics, and sometimes little arbitrary subdivisions of the sciences. It is not surprising that teachers driven by fantastic schedules of rote lessons fail to offer real education in any subject, or that children hurried from class to class come to regard school as a place for reciting rather than for learning.

I have not listed social studies among the subjects of the rural school because it seems to me that the whole school should be organized around the social setting. And the school which realizes its full functions, especially in the country districts, simply has to be at work improving and leavening the social life of the community. Social relationships and community life should not be a lesson in the elementary school; they should be the school.

It may be thought narrow for the rural school to emphasize rural problems since in the mobility of American life so many of its pupils eventually find themselves living in cities. The answer to that is that any sound education must start with things as they are, with the experience and interest which the child already has. One reason rural education has been so futile is that it has cultivated almost none of the natural interests and native experiences of the country child. A further answer is that what we are advocating is not at all a narrow or vocational training but a broad general education rooted in the experiences and interests of the rural child and branching into the fundamental tools and principles necessary for successful living anywhere in the modern world.

For the rural school to accomplish the simple but fundamental tasks that we have outlined, all that is needed is good teachers. But good teaching is just the thing that rural schools in America do not have. To accomplish the purposes of education in the country the teacher, especially in the little one- or

two-room school, should be really a superhuman being. She should be, in her single person, teacher, farm agent, health officer, preacher, librarian, social worker. We know that she will never be all of these to perfection. At present she is no one of them.

To provide good teaching two things are essential: better salaries and better selection and preparation. Other things are desirable, but if these essentials are provided the other things will take care of themselves. For example, better materials of instruction are acutely needed. But if normal schools concern themselves with the real needs of teacher preparation they will be creating teaching materials as a part of their regular work. Again, a wise and efficient school organization is necessary if there is to be effective education. But any school system which can be brought to the point of furnishing good preparation for its teachers and of recognizing in dollars the value of good teaching may be relied upon to exhibit wisdom in other aspects of organization and administration.

The two pillars on which the hope of good teaching rests are salaries and education.

I shall not pause to discuss the first except to point out that at present our salary scale is inverted. We pay more the higher the grade and the larger the center in which the instruction is given. As a matter of fact, the early years are the all-important ones in education and human growth, and the problems and potential influence of the teacher for good or ill is much greater in the country than in the city, in the one- and two-room school than in the consolidated institution.

The particular problem that concerns us is preparation. In the first place, the great need is for sound general education —as much of it as each teacher is able to get. A truly educated person can be trusted with any problem. If he hasn't the specialized skills he can easily acquire them. But, if he hasn't a generally developed intelligence, any amount of special professional training is at best a poor veneer. This is

true even in such high specialties as medicine and law. It is true in teaching.

But professional preparation is also requisite to skill and competence in teaching, just as it is in other professions. I have time only to enumerate items in the professional preparation that seem to me of special importance for the rural teacher.

1. She should learn the efficient methods that have been worked out for teaching the tool subjects, especially reading.
2. She should learn as much as possible not only of general subject matter—book learning—but she should know also as much as possible about the major aspects of rural life, especially farming, handcrafts, and health. And she should know how to utilize the public services in these fields to help the school meet its full responsibilities to the children and to the community.
3. She should learn the handling of rural problems in the midst of actual contact with them in rural settings. Field experience is essential both for the pupil teacher and for the teacher of teachers. Acquaintance and experience with rural matters is just as necessary to the person who wants competence in rural living as actual experience in the use of figures is to one who wants to learn and to teach arithmetic, just as necessary as the actual handling of chemicals is to the student or teacher of chemistry.

The best single device for the education of rural teachers recently invented is that magnificent concept of the Mexicans: the cultural mission or normal school field unit. This brilliant invention provides at one swoop a system of guided experience for the pupil teacher, a method of in-service training for teachers already on the job, a method of supervision of rural schools by the Teachers College, a means of involving the pupils and teachers and the whole educational machinery in the general lifting up of community life. And it provides a means of insuring co-operative work by all the public agencies —education, health, agriculture, library service, home economics—in a concerted effort in behalf of rural life.

As to the possibilities of fashioning and instituting sound education for the rural teacher, I am completely optimistic. The getting of adequate salaries is going to be much more difficult, but even now in certain places, notably British Columbia, the wise though revolutionary practice is already established of paying elementary teachers a living wage and of giving the larger salaries to those who teach in the smaller and rural communities. In fact I am persuaded that we are on the eve of notable improvement and enrichment in the service and the influence of the school in America, especially the rural school. The convincing thing is that many wise people and powerful agencies are setting themselves firmly and vigorously to the task. Heaven knows America has wealth enough to transform even so huge and expensive a service as education. And I believe we are sufficiently intelligent and resourceful to make of the common school system something approaching the ideal to which America has always clung with almost mystical faith.

EDWIN R. EMBREE,
*President, Julius Rosenwald Fund*

# Informal Question and Answer Session

DEAN C. M. McConn of Lehigh University presided at the question and answer session which was open to general discussion, but in which much of the time was used in a discussion of the excellent papers which had been given at the afternoon session by Dr. E. F. Lindquist of the State University of Iowa and Dr. Richard D. Allen of the Providence Public Schools. About one hundred fifty persons attended the session. Dr. Lindquist and Dr. Allen were present as discussion leaders.

Dean McConn asked first about the validity and reliability of test scores in individual cases. Dr. Lindquist in discussing this point said that there was considerable confusion in regard to group norms and individual standards. The norm is a central tendency and is not intended for the evaluation of individual performance, particularly with regard to success of instruction. There must be different standards for each school and for each pupil. What may be considered satisfactory for one student may not be at all the standard that may be applied in another situation. The individual's performance should be evaluated in terms of his standard and must take into consideration such things as differences in ability, in curriculum, and in out-of-school advantages.

Dean McConn said that in his counseling work he found that he could not depend too much on a single test score. He thought, however, that a high score on an intelligence test was much more reliable than a low score. A poor score on a freshman intelligence test may not represent a student's real ability but may be influenced by some such factor as too much fraternity initiation. Dr. Lindquist felt that this observation pointed to the necessity for insisting upon an accumulation of evidence before making a decision. A series of measurements will eliminate the influence of any peculiar circumstances. Experimental evidence shows, however, that one's

physical condition does not seem to make as much difference in the test results as might be expected.

The question was raised about the value of vocabulary tests for testing intelligence. Dr. Lindquist replied that a vocabulary test does give a single rough descriptive index but that it is not diagnostic. Dr. Allen added that it seemed very unfortunate to accept a single index when one can obtain a series of measurements, including scores on non-linguistic tests, which will be diagnostic. He called attention to the fact that the validity of an intelligence test is dependent on the assumption of a fairly common background of experience among those tested. Some people have been handicapped by their environment and should not be measured by the ordinary intelligence test. Too often people make the mistake of confusing literacy with intelligence.

It was suggested that certain aptitude tests might be used in some cases where a linguistic test could not be applied. Those who had used aptitude tests, such as the Wriggly Block Test, felt that all aptitude tests have only a limited application. High scores on aptitude tests have less diagnostic and guidance value than low scores and there are greater dangers in trying to predict success than in predicting failure.

Dean McConn asked Dr. Allen to discuss the problem of parent co-operation in guidance. Dr. Allen said that an ideal program would bring the parents into consultation all the way through school starting in the kindergarten, but that no school had yet worked out such a system. Some schools use the Parent-Teachers Association in an effort to explain group guidance, but often those parents who need it most don't come to the meetings. In Providence the parents are asked to approve the choices of courses that the pupils make for the next term. When the parent overrules the choice of electives that the pupil and counselor have worked out he is asked to come for a conference with the counselor. Parents do not wish to have decisions made for them, although they are very appreciative of the help and individual attention given to

their children. In problem cases the teacher may visit the home, and the feeling on the part of the parent that the counselor is interested enough to go to the home often brings about the better understanding necessary to solve the problem.

Someone asked Dr. Allen about the distribution of counselors among the instructional fields. He replied that just what the counselor teaches is unimportant and that the main thing is to get the right kind of person. Five things to look for in selecting counselors are: (1) a good subject teacher, (2) someone the pupils naturally seek, (3) somebody that can get along with other teachers, (4) a person with a flair for research who is interested in finding out what facts mean, and (5) someone who is professional in his attitude and who is willing to learn.

How can the counselor avoid giving the child a definite social philosophy and assuming too much responsibility for molding the student's mind? In replying to this question, Dr. Allen said that teachers have always done this. Chance remarks such as "With your head for mathematics you ought to be an engineer," have always influenced the pupil's choice. The casual guidance of the subject teacher is usually less competent than that of the counselor. Often the counselor's rôle is not to make decisions for the child, but to prevent him from making a hasty and unwise choice. The counselors make follow-up studies after their classes have been out of high school three, five, and ten years, in order that they may check up and see the results of their own methods.

If we stress occupational guidance in the secondary school are we assuming that most of the pupils do not go to college? Shouldn't they wait until they go to college to make this decision? Dr. Allen felt that the more gradual the decision the wiser it is apt to be, and that whether or not a pupil is going to college should be taken into consideration in the making of an occupational choice. Dean McConn said his experience would lead him to believe that if a boy comes to college with a professional goal even if he changes it after a

year or two, as he often does and even more often should, it is still an advantage to him to have a goal when he comes. The boys who have no idea what they want to do are problems.

A number of questions were asked about the content and details of administration of a group guidance course at the various levels. The following is a summary of Dr. Allen's remarks in answer to these questions.

The group guidance work in Providence is described in detail in Dr. Allen's four volumes in the Inor Group Guidance Series. Volume IV, *Organization and Supervision of Guidance in Public Education,* is a manual showing the problems of the organization of guidance and the first three volumes include the basic units of the guidance course. Such questions as the following are considered in the course: How can I find out what my real interests are? How can I improve my ability to get along with people? Should I plan to go to college? The volumes contain many illustrative cases for group discussion.

In the junior high school an attempt is made to lay a broad basis of occupational information. Then at the end of the ninth grade the pupils present a kind of scrap book of some occupation of their choice. The pride they take in these career books is beyond belief. This is an ideal activity project because if pupils are interested in anything it is in their own personal relations and problems. Twenty years ago there was almost no material on occupations for the junior and senior high school level but now there is a wealth of suitable material. When the content of a guidance course has been well worked out it is easy to convince principals and teachers that group guidance is as much a real part of a general education as literature or mathematics, for example.

When guidance is an administrative function, it is often just the presentation to the pupil of what is thought to be the solution or right answer. As an instructional method guidance means helping the pupil to think through a problem so

that he will be able to find the right answer for himself. The instructional method trains the pupil for self-guidance, so that he will know what to do when the next problem comes along.

It is probably better to make the guidance course extensive rather than intensive. Some schools give a five-hour course in one year, but in Providence it has been found better to give a two-hour course during all six years of junior and senior high school. The course is used as a continuous contact between counselor and pupils, and serves to keep up the interest of the pupil over a long period of time. Probably the guidance course should not be strictly required, though the pupil might be required at least to try the course for a while before deciding that he was not interested in taking it.

In Providence there is one counselor for each entering class in junior and senior high school. This means that there are from 200 to 300 pupils to a counselor. The counselor takes the group entering junior high school and carries it through all three years, making all necessary program adjustments and teaching the group guidance course.

At the college level occupational problems, personal and social relations, and self-measurement problems might be discussed in a continuous orientation course during the freshman year. Freshman week is a splendid idea, but you can't do a good job of guidance in one week. A great deal of material is now available which is suitable for a group guidance course for freshmen. Dr. Crawford's book on occupations and the occupational monographs of the American Council on Education are examples of the type of material that might be used. The course should be given primarily on the basis of discussions rather than of lectures.

Dean McConn asked Dr. Lindquist about the usefulness of general tests which are unrelated to defined units of instruction. Dr. Lindquist replied that the most important advantage of the general test is that it frees the problem of test construction from the traditional limitations of the present school curriculum. The general test gives an opportunity of

periodically re-evaluating the general educational aims and stating those aims in terms of test achievement. It is difficult to describe the character of tests that would be most useful for this purpose because of a lack of agreement on ultimate objectives. We do recognize, however, that there are certain things we want the student to have, and the general test can be used to discover special abilities and specific deficiencies. The practice of giving the tests in the fall tends to divorce test results from the regular curriculum set-up and emphasizes the importance of their use for guidance purposes.

In the Pennsylvania Study Dean McConn found that some engineering students did much better on a general culture test than some students who had been taking the liberal arts curriculum. The high test scores led a few of these engineers to change to the liberal arts curriculum where they did much better work than they had been doing in engineering. This test was useful in finding unrecognized interests and aptitudes which might never have been suspected under the regular examination system.

A mathematics teacher presented the point of view that no objective test can measure what the teacher is really trying to teach. She felt that the Co-operative Geometry Test, for example, failed to test the values she considered most important. The pupil who has developed the ability to solve complex problems does well on the tests, but the converse is not true. She thought that the geometry test should measure the ability to tackle complex problems.

Dr. Lindquist said that he had spoken on this question many times. It is true that the tests do not measure what teachers of plane geometry claim to be developing in their pupils. The claim is made that by teaching geometry you can develop a number of desirable attitudes. The assumption of the test maker is that, if through the teaching of geometry these attitudes can be developed, then it is essential first of all to measure the acquisition of geometry. The test maker is trying to describe differences between individuals, and one

cannot describe differences in terms of tasks that pupils cannot perform. Through experience it has been found that the only kind of items the pupils can handle are those of a fairly low level of difficulty.

One of the first principles is that the sheer arithmetic computation should be at the minimum in an objective test. It is extremely easy to find any number of difficult reasoning situations and original problems to try out the geniuses of mathematical ability, but very few of these items are needed because there are so few geniuses. In order to get a reliable description of the lower end of the scale, the real problem is to find easy problems that are still reliable. The pupils are often able to do relatively difficult problems if they are presented in conventional textbook form, but are unable to do the same problems if minor alterations are introduced such as changing the lettering of a diagram.

Dr. Allen felt that most teachers do not know about the care with which these tests are constructed. Every item is selected because it does distinguish between students. It is not a question of whether any one teacher thinks it is good, for each item has been proved and tested and the test as a whole has been validated. The more experience teachers have with tests of this type, the more they respect them. A very good statement on this question appears in the Inglis Lecture given by Dr. W. S. Learned, entitled "Realism in Education."

Dr. Lindquist was asked how many cases you should have before you can consider norms reasonably valid. He replied that this would depend on the variety and representativeness of the school situations represented. Norms based on a carefully selected sample of a thousand may be more useful than norms based on a group ten times that large.

The head of an independent school asked what was the advantage of having the scoring of tests done by the Educational Records Bureau rather than by the school. Dr. Lindquist replied that, all things considered, it was cheaper to have the scoring done at the Bureau. If the schools do the

scoring, they use people who are trained to do much more valuable work. The cost is hidden in the instructional budget, but it is there just the same. Scoring by a central agency adds to the reliability of the test results. Dr. Lincoln of the Lawrenceville School said that his school had tried both plans and had found that there was no financial advantage in having the scoring done locally. It was further pointed out that if very many schools scored the tests locally it would be impossible for the Educational Records Bureau to provide independent school percentiles which would be valuable. The Bureau is a co-operative venture, and by having tests scored at the Bureau each school shares in the cost of the norms and other services rendered by the Bureau.

Some one asked how much weight the colleges attach to E. R. B. percentiles as compared to College Board examinations. The feeling seemed to be that admissions officers found the E. R. B. test results very valuable, although as yet such results were available on only a small number of candidates for admission. The cumulative record gives a more complete picture of the abilities and achievements of the pupil than can be secured from the College Board scores alone. There is ample evidence that both E. R. B. and College Board tests have positive and complementary values for admission and guidance purposes. Mr. McClelland of Bard College said that in three years he had found no case in which a boy with a low E. R. B. percentile did not have difficulty immediately in that particular field.

At the close of the session Dr. Allen introduced Mr. Reynold Johnson as the inventor of the highly successful scoring machine which was demonstrated during the conference. In answer to questions, Mr. Johnson said that the scoring machine would be rented by the International Business Machines Corporation and that its rental would probably be a small fraction of a clerk's hire. It is hoped that the machine will be ready for general use early in the spring.

# Sixth Annual Meeting of Institutional Members of the Educational Records Bureau

GEORGE A. WALTON, Principal of George School, Presiding

## Resumés of Committee Reports

### INDEPENDENT SCHOOLS ADVISORY COMMITTEE

*Members*

| *Name* | *Institution* |
|---|---|
| Ralph D. Britton | Loomis School |
| Mary H. Dey | Mary C. Wheeler School |
| David R. Fall | Asheville School |
| Hart Fessenden | Fessenden School |
| Ira A. Flinner | Northwood School |
| Allan V. Heely | Lawrenceville School |
| Robert N. Hilkert | Hill School |
| Elizabeth F. Johnson | Baldwin School |
| Halleck Lefferts | Pomfret School |
| Katharine Lord | Winsor School |
| George B. Lovell | Hopkins Grammar School |
| Harold A. Nomer | Shady Side Academy |
| Endicott Peabody | Groton School |
| Harry A. Peters | University School, Cleveland |
| David R. Porter | Mount Hermon School |
| George B. Rogers | Phillips Exeter Academy |
| R. J. Shortlidge | Pawling School |
| Eugene R. Smith | Beaver Country Day School |
| E. Laurence Springer | Pingry School |
| Katharine Taylor | Shady Hill School |
| Dorothy Van Alstyne | Francis W. Parker School |
| George A. Walton | George School |
| James O. Wood | Chicago Latin School |
| Stanley R. Yarnall | Germantown Friends School |

*Frank C. Wheeler, The Choate School, Chairman*

THE Independent Schools Advisory Committee met with the Committee on Relations between Elementary and Secondary Schools with the best attendance on record. The new members elected to the committee this year are Mr. James Wood of Chicago Latin School, Mr. Allan V. Heely of Lawrenceville School, and Mr. Stanley R. Yarnall of Germantown Friends School. According to the

plan of rotation, Mr. Camp of Chestnut Hill Academy, Mr. Hackett of Riverdale Country School, and your chairman retire from the committee at this time.

Dr. Wood, the director of the Bureau, reported on the relation of the new scoring machine to the Bureau testing programs. The machine scores tests of 150 items or less at the rate of about 1,000 an hour with greater accuracy than they can be scored by hand. Its chief usefulness will be in the testing work of a large public school system. The actual scoring of tests at the Bureau accounts for only about one-fourth of the cost of the service, so that the maximum reduction in the cost of the Bureau service would be some fraction of one-fourth of the present cost.

Dr. Wood also described the new "scaled score" technique of the Co-operative Test Service and its effect on Educational Records Bureau interpretative methods. The scaled score method gives a fixed point of reference, which is called 50, and expresses deviations from that point of reference in terms of uniformly equal units. A subcommittee was appointed to study this technique as it applies to the Bureau's method of reporting results. Mr. Fisher of St. Paul's School, Mr. Nomer of Shady Side Academy, Mr. Hilkert of the Hill School, Mr. Britton of Loomis School, and Mr. Wheeler are the members of this subcommittee.

There was considerable discussion of the most suitable time at which to administer the Educational Records Bureau achievement tests in both elementary and secondary schools. If schools are to use the Educational Records Bureau tests for Secondary Education Board preliminary examinations the tests must be available as early as the first of March. There was a feeling that two testing programs involving the same tests are inconvenient and unnecessary. The motion was passed, however, that the 1937 tests should be made available in March for those who wish to use them. The committee members reported a general trend toward using cumulative records for students transferring from one school to another and from elementary to secondary school.

(Later a motion was passed that the chairmen of the Independent Schools Advisory Committee and the Committee on Relations between Elementary and Secondary Schools unite in appointing a committee to formulate a concrete plan of action in regard to testing dates for presentation at the 1937 committee meeting. See report on meeting of Committee on Relations between Elementary and Secondary Schools.)

A motion was passed asking Mr. Britton of the Loomis School to collaborate with the Bureau in preparing a statement of uniform directions to students which would encourage the most constructive and desirable attitude toward the tests.

The nominating committee presented the name of Mr. Hilkert of the Hill School for chairman of the committee for the coming year. He was unanimously elected.

Since the Elementary and Secondary School Committee held its meeting in conjunction with the Independent Schools Advisory Committee, the chair was then passed to Mr. Weld.

COMMITTEE ON RELATIONS BETWEEN ELEMENTARY AND SECONDARY SCHOOLS

*Members*

| *Name* | *Institution* |
|---|---|
| Frank D. Ashburn | Brooks School |
| Thurston Chase, Jr. | Eaglebrook School |
| Hart Fessenden | Fessenden School |
| Thomas K. Fisher | St. Paul's School |
| Halleck Lefferts | Pomfret School |
| Francis Parkman | St. Mark's School |
| Clarke W. Slade | Washington Country School |
| E. H. Smith | Shady Hill School |
| H. S. Stockmeyer | Buckley School |
| Charles B. Weld | Taft School |

*Charles B. Weld, The Taft School, Chairman*

The meeting of the Committee on Relations between Elementary and Secondary Schools was held in conjunction with the Independent Schools Advisory Committee.

The first matter considered was the report of the sub-

committee formed last fall under Dr. Parkman's chairmanship to consider ways and means of increasing interest in the constructive uses of comparable tests and cumulative records among new and member schools. Dr. Parkman reported that there had been a great deal of correspondence and considerable activity on the part of the committee in the way of "missionary work," that is, interesting schools in the work of the Bureau, but nothing very tangible in the way of direct results had been obtained. From the many contacts that had been made, however, he felt much good must eventually result.

Mr. Fisher was asked to make a report in regard to the admissions forms which had been requested from member schools and which had been assembled for consideration. He described some of the general types into which the forms might be classified and explained that he had not received the material in time to go over it carefully enough to make a definite report at this meeting. The motion was then passed that Mr. Fisher and Mr. Fessenden be appointed a committee to continue with this study of admission forms and report on its findings at the next annual meeting. One object of this study is to prepare an admissions blank which will include the best features of all forms and which, with the cumulative record card, will provide a more complete picture of the pupil.

The question was then raised as to what relationship should exist between this committee and the Independent Schools Advisory Committee, whether it should continue to function as an independent body or be considered as a subcommittee of the Independent Schools Advisory Committee. After a brief discussion it was decided that this committee should continue as a separate one but should meet with the Independent Schools Advisory Committee at the annual conference.

The question was discussed of educating schools in the more extensive use of cumulative records by preparing cards for transfer purposes for all pupils, regardless of whether they were requested, and submitting them to new schools with

interpretative letters. It was decided that the Bureau was not in a position to carry on this educational work without having the expense covered. The matter, however, was referred to the executive staff of the Bureau for further consideration.

The question was raised as to whether next year's committee meeting might be scheduled at a time when it would not conflict with the regular evening question and answer session.

In view of the fact that the joint meeting of the two independent schools committees this year was very largely taken up with a discussion of the dates for the spring testing program, a motion was passed that the two chairmen, Mr. Hilkert of the Hill School and Mr. Weld of the Taft School, should confer and appoint a committee to present to next year's meeting a concrete plan of action in regard to this problem. After the meeting adjourned the following committee was appointed: Mr. Lefferts of Pomfret School as chairman, Mr. Fessenden of Fessenden, Dr. Parkman of St. Mark's, and Mr. Walton of the George School.

COMMITTEE ON SCHOOL AND COLLEGE RELATIONS

*Members*

| *Name* | *Institution* |
|---|---|
| N. H. Batchelder | Loomis School |
| Frank H. Bowles | Columbia University |
| W. L. W. Field | Milton Academy |
| Josephine Gleason | Vassar College |
| Richard M. Gummere | Harvard University |
| Greville G. Haslam | Episcopal Academy |
| Frances L. Knapp | Wellesley College |
| William S. Learned | Carnegie Foundation |
| C. R. Mann | American Council on Education |
| Karl G. Miller | University of Pennsylvania |
| J. L. McConaughy | Wesleyan University |
| A. B. Meredith | New York University |
| Eugene R. Smith | Beaver Country Day School |
| Richard D. Allen | Providence Schools |
| John L. Tildsley | New York City Schools |
| Stanley R. Yarnall | Germantown Friends School |

*Eugene R. Smith, The Beaver Country Day School, Chairman*

It is rather difficult to report for this particular committee because it seems to have a triple function. It is a producing committee, an affiliation committee, and an advisory committee. The last bit of producing it did was the Third Report published last fall, summarizing the replies from the colleges of the country in regard to comparable tests and other recommendations made by this committee.

On the affiliation side this committee represents the Educational Records Bureau in keeping in touch with all of the other work going on in this particular field. The affiliation resulted first in working with the Reports and Records Committee of the Eight-Year Study under the Schools and College Relations Committee of the Progressive Education Association. This committee has been studying methods of achievement recording, and is doing an unusually extensive piece of work. Little by little the results of their work will be made available in a form that should be of great use to schools. The committee has also been in close touch with the developments in the American Council on Education. The Committee on Measurement and Guidance of the American Council has asked Chairman Eugene R. Smith, with Dr. Ben Wood, to consider whether the time has come for a revision of the Council's cumulative record card. The Educational Records Bureau card is adapted from the American Council card, and this means that when and if this is undertaken the cumulative cards used by the Bureau will also be submitted to revision. This will require a considerable amount of work, for any attempt to improve recording forms and methods of obtaining information for records is laborious.

In its advisory function the committee has certain decisions that it wishes to submit to the Educational Records Bureau and to other agencies. One question put to the committee was this: "How shall the use of the records from the Bureau be financed?" As you know, the Bureau will keep for any

pupil a record from year to year of the tests he has taken, and send the record to any college upon payment of a two dollar fee. Neither the schools nor the colleges, for the most part, seem able to pay for the records. It was the opinion of the committee that the ultimate consumer—that is, the person applying to the college—might be expected to pay this relatively small fee.

The committee is very anxious to make it more possible for colleges to use the information available at the Educational Records Bureau and for the schools and the pupils involved to realize that this has permanent value and helps to present an all-round picture of the person whose records are being submitted. In trying to find a way in which this could be encouraged, the committee suggests that this recommendation be sent to the colleges which have had any relations with the Bureau: "We recommend to the colleges that they put on their entrance blanks a question as to the availability of tests made by such agencies as the Educational Records Bureau, and the request for such records if they are available."

The next step to work for is a freer exchange of records. In connection with this, the committee believes that investigation should be made of what kind of information is valuable for entrance, what is valuable for placement, and what can be used by personnel and administrative officers for guidance work in college. It may be that there should be duplicate or triplicate records sent to the colleges, or that there should be differentiation of material according to its value for different purposes. It was recommended that those working in this field try to find out the most effective way of making such differentiation, so that the greatest possible use can be made of information about young people.

The committee further recommends that there be an attempt to find out what are the common and fundamental facts which colleges want to know about candidates for entrance and that there be an attempt to prepare a form pro-

viding space for this common information, a form flexible enough to fit different institutions. At the present time there is a great deal of time wasted in schools in filling out totally different blanks for various institutions. If a form can be devised which will present the common information in the best form and still get sufficient flexibility, a real contribution in this field will be made.

COMMITTEE ON TESTS AND MEASUREMENTS

*Members*

| *Name* | *Institution* |
|---|---|
| Richard D. Allen | Providence Schools |
| Ronald S. Beasley | Groton School |
| Emilie Bradbury | Germantown Friends School |
| Rosa Davis | Brearley School |
| Walter Dearborn | Harvard University |
| John R. P. French | Cambridge School |
| Howard V. Funk | Bronxville Schools |
| Donald Goodrich | Calvert School |
| E. D. Grizzell | University of Pennsylvania |
| Merle Kuder | Suffield School |
| John A. Lester | Friends Council on Education |
| A. L. Lincoln | Lawrenceville School |
| C. B. Mendenhall | George School |
| Chester Prothero | Beaver Country Day School |
| H. S. Stockmeyer | Buckley School |
| Arthur Traxler | Educational Records Bureau |
| Frank C. Wheeler | Choate School |
| Howard Williams | Western Reserve Academy |
| Della E. Wood | Radnor High School |

*John A. Lester, Friends Council on Education, Chairman*

The test committee has been enlarged this year from eight to nineteen. The first business on the program was a report from Dr. Traxler on Bulletin No. 18, and on the procedures resulting in that bulletin. The bulletin is entitled *The Use of Test Results in Diagnosis and Instruction in the Tool Subjects*, and it should be in the hands of every school teacher who is interested in testing. It was con-

sidered whether that work should be extended to similar bulletins covering other fields, including social studies, higher mathematics, natural sciences, and foreign languages, and decided that, as progress could be made and material could be accumulated, that should be done.

The next matter considered was whether the Bureau, and particularly this committee, should experiment with the preparation of comparable tests in certain fields in which such tests are lacking and in which they are not likely to be prepared. This was discussed in particular in connection with an examination in general mathematics at the level of the junior high school. It was decided that school heads should be approached to determine whether such a test would serve a generally useful purpose.

Dr. Tyler reported on the development of testing materials by the groups associated with the Progressive Education Association, and Dr. Wood on the new Co-operative tests. Dr. Rothney also spoke briefly on proposed forms for recording pupils' progress in language.

Finally, a subcommittee of five was appointed to make recommendations for the spring testing program of 1937.

PUBLIC SCHOOLS ADVISORY COMMITTEE

*Members*

| *Name* | *Institution* |
|---|---|
| Richard D. Allen | Providence Schools |
| F. H. Bair | Bronxville Schools |
| Willard W. Beatty | Office of Indian Affairs |
| John H. Bosshart | South Orange Schools |
| Paul D. Collier | Connecticut Department of Education |
| John C. Flanagan | Co-operative Test Service |
| Roy S. Haggard | Fitch High School, Connecticut |
| J. B. Johnston | University of Minnesota |
| William S. Learned | Carnegie Foundation |
| E. F. Lindquist | University of Iowa |
| A. B. Meredith | New York University |
| James N. Rule | Langley High School |
| J. L. Stenquist | Director of Research, Baltimore |
| Howard D. White | New Jersey Department of Education |

*Albert B. Meredith, New York University, Chairman*

The Public Schools Advisory Committee held its meeting with six members, or representatives of members, and nine guests present. The public school members elected this year, as their representative on the Board of Trustees, Dr. Frederick Bair, superintendent of schools at Bronxville, to succeed Dr. James N. Rule of Pittsburgh.

The discussion of the evening was centered upon the Public School Demonstration Project as the major interest of the committee. Mrs. Herbert E. Hawkes, field director, reported on the progress made at each of the seven cooperating centers at Billings, Montana; Greeley, Colorado; Groton, Connecticut; Plainfield, New Jersey; Rochester, Minnesota; San Antonio, Texas; and Scarsdale, New York; the problems they are successfully meeting, and her hopes for the future of testing and guidance both in these centers and in the other schools that may adopt their methods.

The most significant developments during the past year she felt to be the increase in the number of tests used and the subject fields covered, the introduction in some cases and improved maintenance in others of cumulative record cards, the gradual absorption of the cost of testing programs in the regular school budgets, and the emphasis being placed upon the importance of using test results for adapting subject matter to the students' needs, dictating classroom procedure, and as a basis for effective guidance by properly trained and personally capable counselors. She also reported the appointment of part and full time guidance experts at several of the centers.

Even with this generally optimistic outlook, however, Mrs. Hawkes stressed the importance and need of further measures for the instruction of all teachers in the fundamental advantage to be secured from the immediate adaptation of test results in the classroom, particularly in motivation, placement, the development of a philosophy of education, the

planning of remedial programs, and direction and methodology of personal guidance.

In the second place she urged that there is still a great deal to be accomplished in educating administrators in institutions of higher learning to the idea that the cumulative records and summary statements based on them constitute important and convincing evidence in meeting admission requirements. Emphasis upon these principles Mrs. Hawkes believed would go a long way toward meeting the ideals originally set for the Project and making these centers, at the completion of the period of experiment, dynamic models for other schools to follow in educational testing and guidance procedure.

Interesting and encouraging reports were presented by the representatives of three schools serving as demonstration centers, Dr. Galen Jones of the Plainfield High School, New Jersey; Mr. Lester W. Nelson of the Scarsdale High School, New York; and Mr. Roy S. Haggard of the Groton High School, Connecticut. In Plainfield and Scarsdale, particularly, very forward-looking steps in the guidance program have been taken. One of the most important phases of the work in each center is that of teacher orientation in testing and guidance procedures. Teachers are coming to realize what can be done with the tests, and are beginning to do it. Experience indicates that the educational work may best be begun with the teachers, for thus they may very early come to realize that the tests are being used in the interest of the pupils rather than by the administration for the appraisal of teaching.

# Symposium

# Experiences of Schools Holding Membership in the Educational Records Bureau

## STUDY HABITS AND SKILLS

EVERY school man who deals directly with children combines in some proportion a gay effrontery and a true humility. With a consciousness of the first and a prayer for the second, I undertook to present to this meeting a bird's-eye view of the problem of study habits and skills. I had in mind the confident and sweeping view of a bird in full flight; I, of course, the bird. Pencil sharpened and paper in front of me, and I am changed. My effrontery has gone from gay to desperate. My humility has become abjectness. The flying bird has vanished. I seek another subtitle and come to this, "How good ideas bog down."

A detached point of view will not "jell." I enter on a chapter of my own sad psychological history. It will not have a happy ending. I hope in the telling it will betray to me my own prognosis for me. I cannot believe that such prognosis will serve any of my listeners for themselves. It must not give them tranquillity. I shall have to be satisfied if my agony gives you confusion and hope.

I enter on my duties at School P. (This is code for Park School.) The time is several years ago. I am brought up with a turn at the occurrence of the First Report Period. It was like taking the temperature of the patients in a hospital ward. At the next regular faculty meeting these temperatures seemed important for discussion. Some of the students who had been talking to me about college choices had marks that were below "certificating" grade. Some of them had marks that were below the spaces provided on the chart.

Some had only asterisks footnoted by teachers' adjectives. Because I did not know the children very well, I asked most of the questions. I found that the marks bore very little relevance to ability. Much testimony was offered to explain the divergences between ability and performance. One phrase seemed to obliterate all others in my attempt to form a category of the evidence; that phrase was "study habits." Obviously, "study habits" was the thing to get at. This divergence must not be permitted to continue.

So we held another faculty meeting, planned to poll the faculty for objective evidence with regard to "study habits." Now was my chance to show my competence. We should exercise immediate, intelligent, and practical measures to repair or create study habits. This was the sort of problem that only awaited someone to undertake. We would develop specifics, and follow them up.

First, there was William. William was doing some rather extraordinary work in Biology Laboratory, but would not record it. When the teacher went on faith that William knew the why and the how of what he was doing, he was abruptly stopped by some astounding revelation of elementary ignorance in the boy. In the English class this boy showed the greatest variation between perspicuity and obtuseness. William woolgathered in class one minute, wise-cracked the class out of countenance the next. He was successful in the art room, successful in putting humor on the drawing board and humoring the others away from the spirit of work. Physically, he was timid. Obviously, what this boy needed was someone to sit down with him and see a job through with him two or three times. Then he would never want to do anything but complete a job. Enter here a technique of study habit practice! But there were some difficulties in the way. It came out that William was an only child. The father was not happy in his work. Father and mother, baffled, had washed their hands of their son's academic difficulty. Study habits? Yes! But this boy was in trouble.

Whatever there was of positiveness in his school environment was negatived in his home. Parents had no influence over him whatever. He had rotten bad study habits; in fact, he had none. It really wasn't fair to attempt rehabilitation without establishing a rapportement with all his adult associates. Anything else was temporizing. This is *not* a success story. When commencement came he was grudgingly graduated. He really has never graduated. After four years he still pokes his head in my door about ten times a year to report to me on progress in his development of his art and his wooing of a field in which this art may be useful. If his art and the field get together, it may sometime be a success story. It will take a real coincidence of the two to develop the study habits which the unconscious conspiracy of home and school delayed.

The picture as related was not come by easily. I have really read a translation. I have not lifted it out of imagination, but out of categories and adjectives. Like these: The boy is lazy; he has a superficial mind. No experience of satisfaction from completion. He is antisocial. He is a rejected child. He has an emotional block. His attention span is short. He inherits wishful thinking. Is there a mother complex? As if such a series of obfuscations was not enough, I found that the faculty had itself very nearly given up the fight. It had no coherent expectation, nothing into which to invite the parents to make it a unanimous demand.

Let us go back to this faculty meeting of several years ago. Next case, a girl. Her study habits were not negatively bad; they were positively bad. She was copying other people's papers. Half of her record of achievement was purloined. In twenty minutes of faculty meeting we found two barriers for her: one was the simple fact that her mother was totally unreliable, and through her deceptions prevented an understanding between father and daughter. The deceptions were well intentioned to save clashes. The other barrier was this:

here was a low-speed academic mind attempting an emphatically academic curriculum. It was obvious that merely telling her that she was kidding herself was not enough. And remedial reading wouldn't give the answer. Or diagnostic tests. Or a course in study habits.

Next case. This problem was accentuated by an abusive letter from the boy's father, blaming his failures on a lack of discipline in the school. This was pretty nearly a success story. The abusive letter was answered by an invitation to call. The call was three hours long, and resulted in the parents agreeing to expect less academically from their son, and the school agreeing to expect more. The result was a mutuality of responsibility and expectation in this boy's human environment. His work improved very nearly to the limit of his ability. He broke no more windows with snowballs. His attention span doubled and trebled.

Several things were apparent from our inquiry about these three young people. We discovered quite readily that we could identify and isolate faulty study habits, and that we knew techniques of training which came pretty near being specific remedies. We knew that these specifics were of no value where there was basic psychological difficulty. It was also clear that we as a faculty were easily tempted to escape into the psychology of the situation. I found that the chief barrier to the development of good study habits often does lie in a vaguely discernible but quite real psychological situation involving a larger area than the school. I found it equally true that there are techniques of study essential to making any psychological resolving successful. I discovered others zealously employed, but not credited for their vital effect on study habits. For instance, practice in outline, in the assembly and selection of material, which practice is deliberately employed in our school from kindergarten to college. And so I found a confusion and was myself confounded. Actually, we were using some specifics. Some were even factors inseparable from any study in the school. Others we

were intellectually aware of, but failed to use. We did not know how much good we were doing or how much neglect we were permitting.

You can readily see that my first flush of confidence for effective action on study habits had its ardor dampened. My simple progress from the first reports to the charming category "study habits" proved too, too simple. I was forced to conclude that establishing a category of study habits is nothing more than a convenient rhetorical repository for certain phenomena of a student's behavior, and that there is no short cut to the establishment of good study habits or to the correction of bad habits. Any diagnostic material is only a step in the solution of a problem. I shall have to admit that by this time my crusade so gayly undertaken had me groveling.

Another thing had by this time begun to formulate itself more clearly in my mind; namely, that there is in the human environment of every school child an air and element of expectation which packs a tremendous punch. It is true that the teacher is the first and best agency for the cultivation and development or remedy of study habits. It is true that a child grows to understand and participate in this development. It is true that the parents' part in the establishing of security is indispensable. Out of this triangle there always develops an expectation. For this expectation to have coherence, the teacher must always bring to bear full information about a child in each stage of his progress. It is obvious that as early as possible, at a time when the total human environment is largely home and school, these two must be brought into agreement as to their expectation from a child. By expectation I do not mean merely the expectation that a specific task shall be accomplished with a specific success. Such expectations come in due course, and are often properly spoken. I am thinking rather of the unexpressed imperative which occurs in the attitude of parents and teachers, a thing which is invariably sensed by a child. Parents must be in-

formed, and honestly informed, about the abilities of children in order that the interests of a child may find security and dignity. Parents can and must supplement the information garnered by the school. Too often it takes a child's major defeat to make a parent conscious of the child as an individual.

The school faculty is also prone to falter in its expectation. The illustrations in the early part of my paper, when added up, reveal this. No teacher would admit that nothing can be done in an individual case. Nevertheless, the ramified aggregate of many cases can and does dull and kill the general responsibility of doing something searching, constant, and continuous for each child. There are more exceptions to, than victims of, this escape. But these exceptions can endanger a faculty attitude, because they give enough external evidence of success to pass for entire success. For a faculty so to fool itself is just as stultifying as for a parent to do so.

There is nothing more constructively valuable in a child's life than informed, intelligent, and intelligible (if unspoken) expectation from his parents and his teachers. The parts of this expectation must make it harmonious; not identical, one the mirror of the other, but parts of a whole: appraisal, sympathy, hope, and suggestion. It may seem that I, too, have escaped into vagueness. Vague or not, the factor of expectation really colors the whole fabric of a school. Not only is it an imperative for a child; it is a dynamic in the thinking of a faculty. And in my own process of thinking about this, in following through marks to symptoms to specifics to psychology, I came on this: I found the first thing of substance on which to rest. I found a place from which to look back and a spot from where to look forward.

You who are erudite and experienced in these matters may, minutes ago, have asked the question, "Why did he not look in a book?" Well, he did. I found a whole literature on the subject. The bibliographies which have been made and kept up to date by Dr. Cecile Flemming and her associates

were an excellent clue. To peruse her bibliographies was to be cast down again. It was to destroy the dream of having our school contribute to the studies on the subject. Statistical superiority cannot be gainsaid. Here is the sort of thing found in the annotations of the bibliography. I quote:

Item: "The skill group improved 28 times as much as the control group. . . ."
Item: "In the first Experiment 122 pupils in the ninth grade were used to find what effect 60 work-type reading exercises . . . would have. . . ."
Item: "Questionnaires were submitted to 482 teachers."

My trouble was that our ninth grade has only 20 members and our faculty about 30. Eminence by statistics and control groups was and is simply out of the question. For this deprivation, however, I was easily consoled by the knowledge that School P. has plenty of fine children insistently needing help. Clearly the thing to do was to explore the literature on this subject for help for these children—sources from which to inform and document our policy. In the literature on the subject I found many subdivisions. A large group of studies was devoted to the place of the library in the development of study habits. Please follow my journey through these titles:

Item: "Interpretation of Library Instruction with High School Social Studies."
Item: "Informal Testing of the Use of Books and Libraries."
Item: "Integrating Library and Class Room through the Library Assembly."
Item: "Study of Students' Knowledge in the Use of the Library."
Item: "Teaching the Use of the Library."
Item: "Enriching the Library Lesson."
Item: "True False Test on Use of Books and Libraries."
Item: "The Library and the Study Problem."

Here, then, in one corner of the study habits structure, and not the cornerstone at that, I found a whole literature

within the literature of the field. I was aghast at the impossibility of finding time to master this corner. Daily life is pressing. Bills must be collected. There is the infinite series of interviews with children, parents, teachers, trustees, and committees. There was dismay in the limitless discussions, in the vague realm of a child's total psychological environment. There was dismay when I found our lack of system, or anyhow the loopholes in our own system. There was dismay when I found the things in home or school which had to be rescued before a child could be rescued. There was dismay when I faced a whole literature on each item in the field of study habits.

In the presence of my accumulated dismay I found it important to list some of the things which most schools have, and to think that a re-orientation of these existing elements and a re-statement of emphasis might actually succeed in putting us on our way. May I list some of the things I found:

1. Good study habits and appropriate skills were actually being gained in the growth and learning process of many of the children.
2. We had some techniques employed which were effective and informed.
3. Some of the papers in the study habit literature were descriptive of processes which our teachers had long since adopted and adapted.
4. It is not an incredible task for each concerned teacher to digest the materials on study habits and skills that directly bear on his own work.
5. In a small school we have a more direct opportunity to make our thinking and work effective.
6. It is possible to draw from any alert faculty a focus of attention on study habits.
7. At School P., we intend to think of each child as an individual and to consider him an increasingly conscious participant in his own education.

I look on this list, and it is not a clean bill of health. It is, however, a bill of health, and the one I have to go on.

I return now, not to my dismaying experiences, but to my thinking about expectation and imperative, the first oasis in my progress. I believe that, if I try to understand the implications of this imperative, such effort can ostracize dismay and commence the resolving of this problem. At the risk of repeating the descriptions of part of my travail, I will try to show what I mean.

Think of the expectation in the environment of every school child as three-fold. First, there is the corporate expectation of the whole school: faculty, children, and parents. Second, there is the intimate expectation of a child's parents and his immediate teachers. Third, there is the specific expectation of measurable achievements and degrees of skill and efficiency. These several expectations must be informed. For the third and specific expectation there exist measures and norms and standards to give answer. The aggregate of these answers is the information with which to inform the second expectation, the intimate one. Here is objective evidence to add in for the establishment of a point of view for parents. It is essential evidence for teachers. To this precise information should be added as objectively as possible a sense of psychological background of a child. Accumulation and sharing of this knowledge by teachers and parents is the absolute prerequisite of making the intimate expectation informed. To live and work with this information is to make it intelligent and intelligible. The expectation which flows from the entire corporate group is as essential as the other two. From it come the impulses that make the other two possible. This is essentially simple, although it may seem vague. And it is valuable. In outline it is merely this: It is the desire that each child shall grow at his own rate of growth and learn at his own rate of learning, that the springs of his nature will find outlet.

My part and your part toward good study habits is *not* to be dismayed. You and I can speed the focus of our several school groups by adding our energy to that of the loyal others.

We can give it continuity by the simple process of not forgetting it. Every book I open, every case history I become part of, eventually asserts or confesses that, regardless of all system and all statistics, the individual teacher is the indispensable resource for each child. Him or her we can encourage to energize his purpose and inform his judgment. Him or her we can help towards the inclusion of the parents in an effective triangle.

If I have said little or nothing about a child's own part in a development of study habits and skills, it is because I only know enough to write the prelude. That the child's part is of consummate importance is perfectly clear. That, too, is the subject of a body of literature. But this paper was to be and has been a chapter of my own sad psychological history. I said it would not have a happy ending. Because it does not reach far into the lives of children is the reason it does not have a happy ending.

HANS FROELICHER, JR.,
*Headmaster, The Park School*

## THE USE OF CASE HISTORIES IN GUIDANCE

IN ORDER to perform successfully its function of individual guidance, the school must

(*a*) Accumulate continuously significant information of all sorts about each pupil.

(*b*) Record this information in clear and accessible form, as it accumulates.

(*c*) Make the accumulated information easily available to all teachers or school officers dealing with the particular pupil.

(*d*) Arrange for easy and frequent interchange of information, opinion, and advice among all teachers dealing with any pupil.

(*e*) Place the primary advisory responsibility for a given pupil squarely upon one person, whose contacts with that pupil are sure to be frequent and whose personal relationship is likely to be favorable.

After experimenting with various devices, the faculty of the Cambridge School has adopted the "case history" form of pupil record as a supplement to the cumulative record card furnished by the E. R. B.—which we have used with satisfaction for many years but which just is not big enough to hold the whole story. The case history consists simply of a number of sheets of ordinary typewriter paper, clipped together for filing, and bearing appropriate headings. A master copy is kept in the pupil's folder in the office files; a second copy is placed in the hands of the pupil's adviser teacher. Entries are made upon the appropriate sheet, and dated. Extra sheets can be added under any heading if required.

Procedures are as follows:

1. As soon as a pupil is entered for the school, all possible information is secured by the office from parents and previous schools. This is supplemented, whenever possible, by an interview with the pupil before school opens.

2. This information, after being edited by an experienced person, is immediately entered under headings A1 and A2 of the case history. A1 carries all items relating to family and social background, health history, noteworthy personal characteristics or achievements, etc. A2 carries the previous school history, in terms of names of schools, subjects and marks, objective test results, if any, "credit" for college entrance, etc.

3. The faculty assembles three days before the opening of school in September. At this time all pupils are assigned to particular teachers as their advisers, so far as possible on the basis of known or expected compatibility. Parts A1 and A2 of the case histories of new pupils are then placed in the hands of the appropriate adviser teachers, and tentative programs of study are arrived at by conference. (Pupils previously in the school have had tentative programs arranged in the preceding June, and have indicated their preference of advisers.)

4. Part B of the case history covers the first year of the

new pupil in the school, and entries are made under four headings, as follows:

I. Personality and Social.
II. Academic and Tests.
III. Health and Sports.
IV. Problems and Plans.

It is obvious that under the first heading there should accrue during the year a developmental record, consisting of observations made by any and all faculty members having dealings with the pupil. Unfortunately, critical points in the development of a child's personality cannot be arranged to coincide with the routine "marking periods" of the school year. The case history is ready to receive significant data at the moment when they become significant.

Those familiar with the cumulative record card of the Educational Records Bureau will recognize that under the heading "Academic and Tests" there must occur a duplication of items for which space is provided on that card. This duplication seems to us justified by the added convenience to the adviser teacher of having the whole story easily at hand, and ample space for recording special circumstances which cannot well be entered on the card. We use a wide variety of objective tests, in addition to the batteries recommended by the Bureau for its annual fall and spring testing programs. Tests of specialized aptitudes, in particular, are pertinent to the case history.

The third and fourth headings are perhaps sufficiently self-explanatory. Under "Health and Sports" would be recorded all recreational activities of the pupil, including those commonly termed "extracurricular." Finally, and most important, *it is the duty of the adviser teacher* to see to it that under the four headings there shall be accumulated a running record of the school experience of each pupil in his advisory group throughout the year.

5. During October, the adviser teacher must consult all other teachers dealing with each pupil in his advisory group,

and with the help of the headmaster prepare a letter to the parents, telling them what sort of start the pupil has made on the new school year. He may ask for an "interim report" in writing from any teacher, but must in addition confer with him personally at least once. Time for such conferences is arranged and scheduled by a "Program Committee." The letter serves also as a starting-point, to which subsequent evaluations of the pupil's progress can be related. We believe the scheme serves to promote on the part of the faculty a considerable effort toward learning the pupil before they undertake to teach him.

6. Part C of the case history tells the story of the pupil's second year in the school, under the same headings as Part B; Part D, the third year; and so on.

7. Instead of asking teachers to sit down at the end of each school term and then and there evaluate the personality traits of, say, fifty pupils on a five-point scale—a procedure which they commonly dread, and quite rightly contend is thoroughly artificial—we ask them to keep their eyes and ears open all the time for material which is pertinent to the case history. Each teacher is provided with a little green pad of "Personality Report" blanks. Any observed trend or incident which seems to him significant, he records on the spot, or as promptly thereafter as possible. The pad has a sheet of carbon paper in it, like a salesman's order book. One copy of his note goes to the headmaster's desk; the other into the mailbox of the adviser teacher of the particular pupil observed. The adviser decides whether the item is significant enough to be entered on the case history.

8. Toward the end of the school year—but not *at* the end—a second letter will be sent by advisers to parents, summing up the personality development of the pupil during the year. The case history is expected to furnish ample material for such a letter, which is intended to take the place of the usually perfunctory "comments" formerly incorporated in the term reports of academic progress.

Summing up—the case history, coupled with the "green slips," furnishes a method for keeping the attention of teachers continuously focused on individual personality development, for amplifying the cumulative record of a pupil's progress through the school, for keeping the adviser teacher informed of behavior observed by other teachers, and for reporting to parents in more than a perfunctory way the things they want most to know about their offspring. Unquestionably it asks of teachers—particularly adviser teachers—an intensity of preoccupation with the job of guidance and a cheerful expenditure of time and energy which only the best teachers will attain. But it seems to me the principal job of the school administrator is to provide that sort of teachers.

JOHN R. P. FRENCH,
*Headmaster, The Cambridge School*

## NEW SOCIAL STUDIES TESTS

WHY new tests in the social studies field? For some years we have had factual tests for the traditional courses of history—and rather adequate ones, I think. Philosophies differ; some thought this factual product a rather important outcome, others looked upon it as somewhat incidental. For some years you have heard objections from the history teachers—these tests test nothing but facts, dates, names.

These teachers say: "We want our students to become skilled in handling those materials and study methods appropriate to the social studies. We want to develop in them certain attitudes, ideals, habits toward truth, other peoples, races, their civic and social environment; we want to develop interests, appetites. If you test only facts, we cannot help but emphasize factual history, we change our objectives to meet your test."

I suspect sometimes that they are chiefly interested merely in not being tested. But the fact remains that there has been

a demand to be freed from such evaluation which tended to distort the course of study and to warp our objectives from the true purpose of the social studies as we professed them.

Now we have at our disposal some beginning efforts on the part of the test makers to meet our demands.

1. The new Wrightstone tests, for example, attempt to measure the student's ability to obtain facts from tabular, statistical material, from bar and line graphs, from index and table of contents, card catalog, dictionary, footnotes, and other reader's helps and guides.

2. They attempt to measure the student's ability to organize research materials—specifically, through separating relevant from irrelevant material, through sensing the logicality or coherence of a complete idea, through co-ordinating and subordinating material, and through outlining ideas under a stated topic.

3. They attempt to measure a student's ability to interpret facts (taken in these tests from the field of American culture and history). Specifically—to measure his ability to comprehend the meaning and significance of given facts, his ability to combine described facts and dates in relationships that indicate a trend, his ability to generalize or draw inferences, or make reasonable conclusions based upon given facts.

4. They attempt to measure a student's ability to apply generalizations to particular social studies events so that the specific event is understood in relation to basic social studies concepts.

5. A fifth part appeared in the preliminary forms of the Wrightstone tests—an attempt to measure civic beliefs, such as racial attitudes toward the Negro, the Japanese, or such as international and political attitudes and attitudes toward art, liberalism, and moral practices. The author hoped to obtain from this a composite index of the student's tendency to favor liberal or conservative civic attitudes and practices. But this apparently remains a task a bit too difficult to evaluate. At any rate, it did not get into the revised form.

A second promising beginning comes from Columbus. This past summer, a group of teachers representing some of the schools engaged in the eight-year study of the Progressive Education Association worked with Dr. Ralph Tyler at Ohio State University along lines somewhat similar to the efforts of Dr. Wrightstone. The approach was different, however, in that each institute member had an evaluation problem of a particular school in mind and a definite set of objectives for that school which set the problem.

The record of their work shows that there was common agreement on the desirability of developing in students the ability to draw sound generalizations from data given, and to validate or reject generalizations with which they might be confronted.

The summer was spent in developing procedures for measuring such abilities. Teachers selected problems from certain areas of experience pressing at the time for some school. Interest in war and peace, natural resources were common, however. The tests developed under such conditions are obviously not for general use but as attempts to measure certain of those phases of the social studies which seem hitherto to have defied measure; they are most interesting. Consider the following types:

Are you learning to formulate sound generalizations, a test of group opinion? (Really I think an attempt to evaluate political, social, moral, religious, economic attitudes, prejudices.)

A test of inferences—the ability to draw logical conclusions (even despite prejudices).

An appreciation test—an attempt to measure the student's ability to recognize the accomplishments of early people as significant to himself and to the development of civilization.

*A scale of beliefs*—a test of tolerance, an attempt to measure religious, racial tolerance, toleration toward political ideas and toward adults.

A test on democracy in its political, economic, and social aspects.

A test on patriotism (attitude toward foreign countries,

toward war, toward humanity, toward (respect for) government).

A test of ability to interpret data (on the basis of facts given which of the following statements are true, are false, might possibly be true but are not established by the facts given?).

A test of word-sensitivity (a susceptibility to catch-all phrasing, propaganda, name-calling, a measure of emotional bias and of objectivity of thought).

A scale of beliefs on the American farm.

Incidentally the mathematics group at the same institute worked along very similar lines.

"Are you learning to recognize and evaluate assumptions?"

"Are you able to distinguish facts from assumptions?"

"Are you learning to use sources of all kinds to help you discover that which you wish to know?"

And it is interesting to note that the materials upon which these tests are based would be recognized by most of us as belonging to the social studies rather than to mathematics as we usually think of mathematics.

Perhaps one may venture a word in evaluation of these efforts without forgetting that they are not presented for criticism and that they are as yet in the very preliminary stages of development. I think they are very promising, not so much in the field of evaluation as in motivation and guidance. If we think of evaluation as the weighing of the direct product of our teaching, as a means of certifying a given student or group to some agency, these are rather uncertain instruments. They measure maturity, perhaps, the ability to handle certain kinds of material, the presence of certain attitudes, readiness for advanced work, or the lack of these things. But whether we should lay much claim to the results as evidence of the success of our teaching is less certain. Does not intelligence enter in, home and community background, and maturity? We discover, for instance, the student is free from these racial prejudices. Is it with my help, or in spite of it? The student can reach logical con-

clusions. Is it intelligence, my help or the work of that socially minded mathematics teacher?

But as a means of discovering need for teaching, guidance, as a means of selecting experiences most profitable to the student while he is yet in our care, they may be invaluable. Used several times during the student's secondary school experience, we may note growth in certain directions and a readiness to approach problems on a mature or adult level—and this along with other personality information will be very valuable to the receiving teacher or dean.

What, then, will our social studies testing program include?

These tests, to be sure. We want to know that John is becoming more and more free from prejudice, emotional bias, that he is mature in his approach to problems in the social studies field, that he has certain attitudes and appreciations. We are anxious to know (measured as objectively as possible) the extent to which this student, John, has acquired the ability to use the tools of the worker in the social studies field, the ability to obtain facts, to organize facts, to interpret facts —powers, by the way, which are valuable not solely in the social studies field.

But I suspect that we are still going to be pleased if John also knows some of the facts. It is all right to be able to find facts, and to use facts, and to test our ability to draw conclusions, but it is also very convenient to have a few facts with which to begin.

We will not, therefore, eliminate completely our factual testing. May I suggest that we in our school would like some one to develop for us a new test in that field. With our emphasis on problems of modern civilization, we have gotten away somewhat from the course in medieval history, the course in modern Europe, the course in American history; there is much more continuity to the work and much more concern about the light which the past sheds on the problems of today.

Can we not have from the Co-operative Test Service in the

field of history an equivalent of the general science test or the literary acquaintance test which might be given at the beginning of the senior high school period and in the middle and at the end, not so that we can cram facts, not because facts are the sole or even the most important product of our teaching, not so that we can compare schools or teachers, but so that we can measure in general terms the student's increasing command of the factual background which seems to explain and interpret our current civilization.

SYDNEY V. ROWLAND,
*Superintendent, Radnor Township School*

## TESTS AND SCHOLASTIC GUIDANCE

MOUNT HERMON was founded for the purpose of giving deserving boys of limited means an opportunity to obtain an education. In order to be true to this fundamental purpose, it is necessary to enroll many boys of limited ability.

This fall we have 260 new boys. The I. Q. range of this group is: 74 — 138, $Q_1 = 103.7$, Md. $= 112.5$, $Q_3 = 119.5$. Thirty-seven of these boys have I. Q.'s of less than 100, and 49 are above 120. My primary occupation is to give scholastic guidance to these boys as well as to over 300 others who have attended Mount Hermon more than one year. Our boys come from all kinds of communities and schools. John Jones comes from a farm home in northern Vermont. His people find it necessary to practice rigid economy. He has attended a small high school where there are two teachers and 30 pupils. He comes to us with his clothes only and a few hard-earned dollars for board and tuition. The idea of having 25 or 50 cents a week as an allowance to spend as he pleases is an unheard-of luxury. John Smith comes from a city home of moderate wealth. His first year of high school has been spent in a large metropolitan school where there are 350 teachers and 10,000 pupils. He always has had a liberal

allowance, and to be somewhat restricted in his expenditures causes considerable readjustment. High school records show that the two boys have done about the same grade of work. Obviously, the educational backgrounds of the two boys are far from the same. The results of scholastic aptitude tests are of invaluable assistance in properly guiding these boys.

Our testing program at Hermon is as follows: To every boy who applies for admission there is given the Otis Self-Administering, Higher Form C, test. If the I. Q. computed from this test is very far below 100, we usually advise that the boy be placed in some school where his advancement is not primarily dependent upon academic achievement. The morning after registration every new boy is given the Co-operative English Test, Series I. In the afternoon all boys take the Terman Group Intelligence test. The next day every boy takes the American Council Psychological test. The American Council tests are sent to the Bureau for scoring. All other fall tests are scored at Hermon. In March or April we give the Co-operative Achievement tests. In addition, a large variety of tests are used by teachers in their regular classroom work.

It is evident that the only guide, in so far as the period before the fall testing program is concerned, which is at hand to aid in placing a new boy in the proper subjects at the opening of school, is the I. Q. from the Otis test. Our procedure is to place a boy who has had one or more years of high school work where he would naturally have been placed had he remained in public school. We find that it is much more conducive to contentment and hard work to allow a boy who has had two years of French to try French III than it is to place him arbitrarily in French II. If he finds by trial that he cannot do the advanced course, he then will readily go back to repeat his second year's work. We must also watch for the brilliant but lazy boy who prefers to take the easy course to avoid work. In such cases the I. Q. is a great help. The Otis I. Q. is also of great assistance in

placing boys who have just completed their eighth grade work. Unless a boy in this group has an I. Q. of 110 or more, we do not ordinarily have him start a foreign language during his first year.

After school is well started, the second phase of the guidance work begins. A teacher reports that a boy is doing poor work in Math. III. The boy's record is examined, and the boy is called into the office. It is found that he had average grades in Math. I and Math. II; that his I. Q. is 116; that his A. C. I. S. percentile is 54. No reason appears why he should not be doing work well above the average. A diligent search is made to find the cause of his failure. In this search the results of the intelligence and psychological tests are invaluable, because in such a case you know that the boy is capable of doing the work irrespective of what he says. In talking with the boy just mentioned I should not tell him that his I. Q. was 116, or that his A. C. I. S. percentile was 54, but should tell him that the results of these tests placed him in the upper half of the school, and that his indicated scholastic ability was such that his general average should be 75 or above. I am also very willing to tell a boy just where he ranks in his class. Most boys respond to such treatment and make an effort to do the grade of work of which they are capable.

If I am talking to a boy whose indicated capacity is low, my whole aim is to encourage him. I tell him that he has to work much harder to master his assignments than many other boys, but that his achievement quotient may be just as high as that of his brilliant classmate. We find a boy's A. Q. by dividing his achievement by his indicated or predicted capacity; e. g., a boy's I. Q. and A. C. results show that he should make a general average of about 72, while his achievement is 85. His A. Q. is $85 \div 72$, or 118. Another boy whose indicated capacity is 56 achieves an average of 67. His A. Q. is 119. He is doing as well as the other boy and needs praise and a pat on the back.

The boy whose capacity is 73 and who achieves 52, thus having an A. Q. of 71, is a problem. We study his background, both scholastic and family; find out what his hobbies are; check with his adviser, the physical education department, and the psychiatrist. Ordinarily the reason for failure is found, but not always. When baffled by a case, I always feel a sense of defeat, though I am old-fashioned enough to believe that now and then there is a genuinely lazy boy who needs drastic treatment!

To help in our guidance work, we construct the Mount Hermon Percentile, or Equating Table. From this table we can equate I. Q.'s, A. C. I. S. percentiles, A. C. Total Scores, I. S. percentile of Co-operative tests into local percentiles or into terms of Mount Hermon per cent grades. I find that I am more easily understood by boys and faculty alike when I talk in terms of per cent grades rather than of percentiles. Early in the year each teacher is given the indicated aptitude of each of his classes. This serves as a helpful guide. We find that in over 75 per cent of our classes the achievement surpasses the prediction.

In all of this work I should be greatly handicapped if I did not have constantly at hand the results of the scholastic aptitude tests. I find that the I. Q. determined by the Otis and Terman tests seems to be most useful as a basis for predicting the scholastic success of boys just beginning high school, and the A. C. percentiles are more satisfactory for students of the junior and senior years. However, I have found the best measure of scholastic aptitude to be an average between the local percentile of the I. Q. and that of the A. C. I know that this is somewhat crude, and that there seems to be no mathematical or statistical reason for doing it, but it seems to work. I could not do this without our local equating table.

But, after all is said and done, the individual boy is the main consideration. We cannot damn him if he has a low I. Q., nor necessarily expect a genius if he has a high I. Q.

We have all seen many boys with low I. Q.'s who by sheer pluck, persistence, and constant hard work make an academic success of preparatory school, college, and life. We have also seen other boys with high I. Q.'s become dismal failures.

On our temporary record card, to us the "yellow card," we have in red each boy's aptitude in terms of per cent grades. The indicated aptitudes are figures respectively from A. C., I. Q., local percentiles, and average of the two. Underneath we place each boy's scholastic average for each report period. We also have on this card the local A. C. and I. Q. percentiles. These cards are available to each teacher. These data are indispensable to the administrative staff and advisers.

On our white or permanent record card, which is modeled after the E. R. B. record card, in addition to a boy's scholastic grades, we have his rank in class, general average for the year, A. C. I. S. percentiles, total score, and Terman I. Q., as well as his honors and an account of his extracurricular activities.

The last of March or early in April we give the Co-operative tests to all pupils in all classes except the Bible course. We feel that, in order to measure accurately our work by these objective tests, we must have all of our boys take the tests. Therefore, there are no special groups of superior students that alone take these tests. Neither are our boys coached for the Co-operatives. They are given an opportunity to see sample tests in the classroom and the library. We have the corrected tests returned and use them for review purposes. However, they are returned to the boys for classroom use only and are eventually destroyed. The scores from these tests are translated into grades, and in most of the departments they are given weight in determining a boy's final grade for the year.

Mount Hermon is an ardent supporter of the E. R. B. and finds its testing program of great value.

NELSON A. JACKSON,
*Director of Scholarship, Mount Hermon School*

## INCREASING COMPARABILITY OF SCHOOL MARKS THROUGH TEST SCORES

STUDENTS, parents, and even some faculty members have considerable difficulty in understanding just what a percentile is, what such a rating means, and how it is to be interpreted in terms of success or failure. To simplify the situation for all concerned, we have developed at Loomis a system for converting the E. R. B. attainment percentiles into comparable school grades of A, B, C, D, and E. These grades are then sent home to parents and given out to students. They have been used by us in checking our own marking system and in reclassifying students. They have also been used very successfully in predicting success or failure on the College Board Examinations. While they are not as yet actually averaged into our final marks, they serve as limiting factors and certainly influence the instructor consciously or subconsciously in his own estimate of a pupil's worth.

Practically all of our students go on to college, most of them going to colleges requiring the College Board Examinations for admission. That being the case, our own marking system and the standard of our teaching should be comparable to the College Board level. That Board has found, in giving examinations from year to year, that, in spite of great care in making out the examinations, marked difference in the difficulty of the examination has developed. They have found that there has been, however, little difference from year to year in the caliber of the preparation of 5,000-odd students; in short, that roughly 35 per cent of the applicants should probably fail any general examination each year; that there was no reason for 40 per cent failing one year and 20 per cent the next. In other words, the percentage of failures should be the constant factor regardless of the difficulty of the examination. Hence, the 35th percentile is roughly the passing level. Since the group presenting itself for the College Board Examinations is probably only slightly more

selected than the group from the independent schools taking the Co-operative tests, we have adopted the national independent school 35th percentile as our passing level. Any student below that level is given a failing grade, which is in our system an E. If his rating is below the 15th percentile, his mark is F. That we have hit upon just about the right point for establishing a failing grade seems apparent from last year's results. We normally expect about 20 per cent failing grades in our own school marks, and last year, by converting percentiles into school grades on this basis, we obtained 19 per cent at E or F. Moving on up the scale, we gave any rating between the 35th and the 58th percentile, including the national independent school median, a D; from the 58th to the 80th, a C; from the 80th to the 97th, a B; and from the 98th through the 100th, an A. This scale was evolved partly by guesswork and partly on past experience. However, it gave us a very nice distribution with 7 per cent at A, 19 per cent at B, 26 per cent at C, 29 per cent at D, and 19 per cent at E and F.

The question is, of course, "How do these marks compare with the marks that the instructors have given, and what use can be made of them?" On the whole, they line up very well. Out of a total of over a thousand marks, 42 per cent were exactly the same mark that the instructor had given. The other marks showed variation of from one to two letters. Occasionally, there is great divergence. One case of such divergence occurred last year. A boy who had received failing grades throughout the year from his instructor received an A on the Co-operative test. This particular boy had been brought up in Germany, spoke German, and naturally could read extremely well. He knew most of the vocabulary and consequently made an excellent score on the examination, whereas he knew little grammar, was careless in all his written work, and consistently failed the essay type examinations which his instructor had been giving him. In almost every case where any great discrepancy in marking

exists, there is a very good reason which can be ascertained with investigation.

We have made a comparison of our own grades, the College Board grades, and these E. R. B. grades, and find that the average grade in each system is almost identical with the average grade in the other systems. However, when we examined individual grades, we found that the E. R. B. grades were closer to the College Board mark than our own grades were to either of these objective ratings.

Some of our faculty were interested and quite surprised to see what variation there was in the three systems. For example, in our group of students taking the College Board Examinations, there were 26 Loomis final grades of B. Of these 26, 2 received A on the College Board Examination; 14 received B; 8, C; and 2, D. In the same group there were 29 E. R. B. grades of B. Twelve of the 29 received B on the College Board Examination; 10 received C; 6, D; and 1 failed. The most startling fact was that of our own final grades of A, and we give A's sparingly, not one student received a comparable A on the College Board Examination. Yet one-fourth of the students making an A on the E. R. B. test made a comparable A on the College Board Examination.

Actually what it amounts to is that the conscientious, hard-working, unimaginative student tends to be given by his instructor a higher mark than he actually deserves, while the bright, lazy, imaginative student is penalized too much for his laziness and carelessness. The Co-operative tests tend to reverse this process by giving the bright student credit for everything that he knows and by giving the conscientious plodder credit for only what he knows. By averaging the two sets of marks, a much more accurate picture of the student's real attainment is acquired. Since final school grades should be a reliable index of attainment, the only conclusion that can be drawn is that the E. R. B. marks should be an integral part of that final rating. Just what the percentage should be is problematical. We have experimented by let-

ting the E. R. B. grades stand for 50 per cent of the final marks, with very satisfactory results.

I should like at this point to quote Dr. A. B. Crawford, of the Department of Personnel Study of Yale University, from an article entitled "Some Criticisms of Current Practice in Educational Measurements," appearing in *The Harvard Teachers Record.*

> The most disappointing factor in our general prediction studies has proved to be College Entrance Examination grades. Despite the fact that these examinations, as all of us know, are prepared and graded with great care, investigation reveals that they fail satisfactorily to predict either students' subsequent college achievement generally, or their competence in specific subjects, particularly. . . .
>
> In general, we find that a student's school ranking affords the best single measure of his educational promise for college . . . Since school records are the backbone of our predictions, we are especially interested in means whereby grades and ranking from different schools of varying standards can be expressed in uniform, comparable terms. We believe that the Educational Records Bureau, by providing a standard, objective measure of school achievement, is doing much to strengthen this important criterion—and we find that the schools using its services furnish particularly reliable school-grade data.

If all schools adopted the same scale for converting E. R. B. percentiles into grades of A, B, and C, and then averaged their own marks on a 50 per cent basis, it is obvious that a much greater degree of comparability in marking in different schools would result. Further, those schools which have abandoned a marking system in favor of written comments would be provided with a ready method of furnishing other schools and colleges with information both simple to understand and easy to obtain.

RALPH D. BRITTON,
*Department of Foreign Languages,*
*The Loomis School*

# THE PERSISTENCE OF INDIVIDUAL DIFFERENCES IN RELATION TO GUIDANCE

IN THE fall of 1934 the Plainfield High School received an invitation from the Educational Records Bureau to participate as one of seven schools in its Public School Demonstration Program. Formal acceptance of the invitation was made by the Board of Education at its regular meeting in November, 1934. This acceptance involved the approval of at least three additional services to aid in implementing the success of the project. These services were: first, the assignment of five teachers to half-time service as guidance counselors and another teacher to devote two-thirds of her time (now full time) to the direction of the testing program and to servicing the cumulative records; secondly, a commitment to a fall testing program using one scholastic aptitude test and one test of reading comprehension, as well as to a spring testing program covering the five academic areas for which tests prepared by the Co-operative Test Service are available; and thirdly, the installation of the adaptation of the cumulative record folder of the American Council on Education as made for the Kardex Visible Files by Remington Rand, Inc.

One may infer from this introduction, therefore, that we have available for study the data from two fall and two spring programs of measurement. The results from these two years are admittedly too limited to furnish the basis for really valid answers to the questions under consideration; namely, the persistence of individual differences in relation to guidance. When we have had time to follow the same group of pupils through at least the junior and senior high school periods, we may then be able to make a reliable generalization from the achievement test data. From this two-year program there are some facts, however, which probably indicate the general form which the answers may eventually take.

From the point of view of guidance it is important, first

of all, to discover the extent of differences in achievement among pupils pursuing the six different curricula offered by the school in June, 1936. For this purpose use is made of the results for 419 tenth grade pupils who were measured by the Co-operative English Test, Series I, Form 1936. Reference to Chart I shows, first, that whereas there are noticeable differences in the means, quartile deviations, and

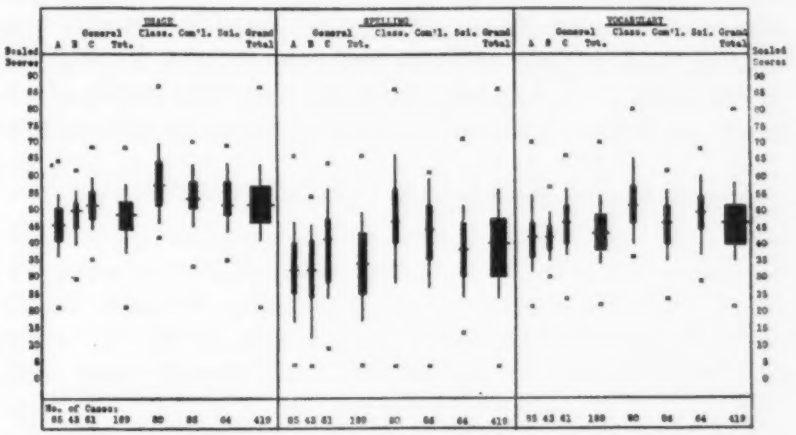


CHART I. Showing the standing on the parts of the Co-operative English Test, Series 1, Form 1936.

the ranges of the distributions of the various curriculum groups, there is considerable overlapping of the distributions of the academic curriculum groups (Scientific and Classical) and the other curriculum groups (General A—Technical and Industrial Arts, General B—Home Arts, General C—Nursing and Normal School Preparatory, and Commercial curricula). Secondly, the classical and scientific curricula (college preparatory) are being pursued on the whole by pupils whose achievement in English usage, spelling, and vocabulary is in keeping with their guided selection. On all three parts of the test, three-fourths of the 80 pupils in the classical curriculum make scores above the means of the pupils in all curriculum groups combined. It will be noted, however, that

the guidance program has not been effective as yet, largely because of parental demand, in guiding out of strictly academic curricula those few whose achievement does not seem to justify their continuance therein. Thirdly, pupils of high achievement and superior scholastic aptitude are to be found in each of the six curricula. These become cases of particular study in order to make certain that possible future plans are being adequately protected. It is pertinent to remark in this connection that pupils are grouped for English instruction according to scholastic aptitude and achievement, irrespective of curriculum. It has been assumed, also, that pupils of superior achievement do not necessarily belong in college pre-

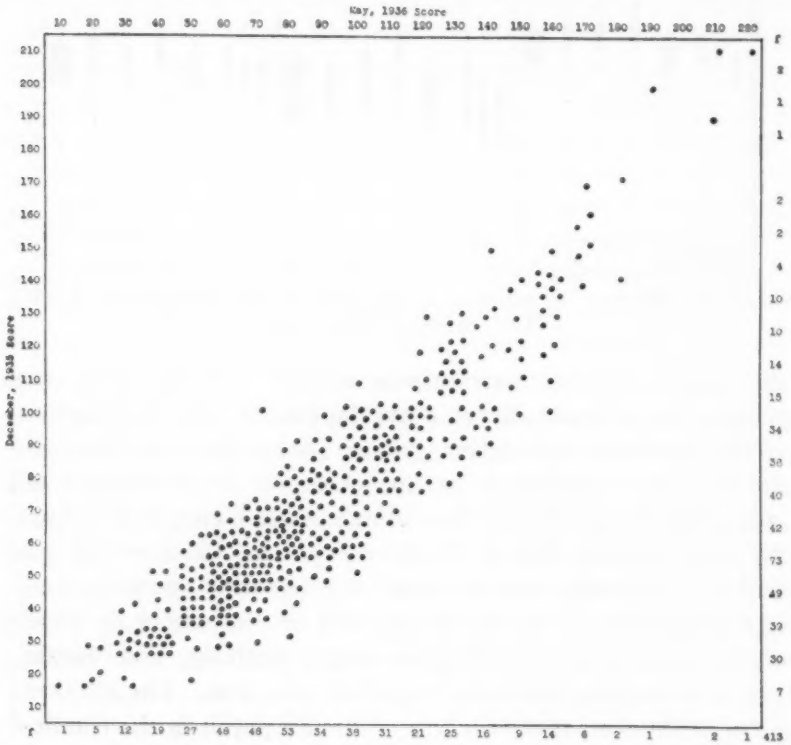


CHART II. The scatter diagram of the scores of students tested in December, 1935, and again in May, 1936, by the Co-operative English Test.

paratory curricula, that industrial and business pursuits solicit and need capable, non-college trained apprentices who may later become leaders in business and industry. These are, of course, not all of the observations which may be drawn from Chart I, but the limits of this discussion forbid additional comments.

To date we have only a few analyses of subject achievement data which bear directly on the question of the persistence of individual differences. The first of these is pictured in Chart II, which is the scatter diagram of the scores of 413 students tested in December, 1935, and again in May, 1936, by two successive forms of the Co-operative English Test, Series I.

It will be observed that the correlation between the results on these two comparable tests is very high, being .93 in fact, indicating that the relative standing of these 413 pupils in these comparable measures of the same subject matter is suggestive of strong persistence of individual differences. We have taken this to mean that rather marked differences in curriculum materials are demanded for those in the upper and lower ranges of this distribution. We have begun, therefore, to experiment with three quite distinct, not modified, English courses of study for lower, middle, and upper achievement groups. We are also interested to find, both by means of these tests and teacher judgment, when the law of diminishing returns on the materials represented by this test—usage, spelling, and vocabulary—have set in for individual pupils at various levels of the distribution, particularly those in the lower ranges, with the purpose of directing them into areas of instruction where greater returns may be forthcoming for the time spent. At this juncture it must be confessed, however, we are not at all certain as to what the more profitable materials may be.

The second group of facts which we have analyzed in an attempt to discover the persistence of individual differences are those obtained from the Co-operative Latin Tests. Chart

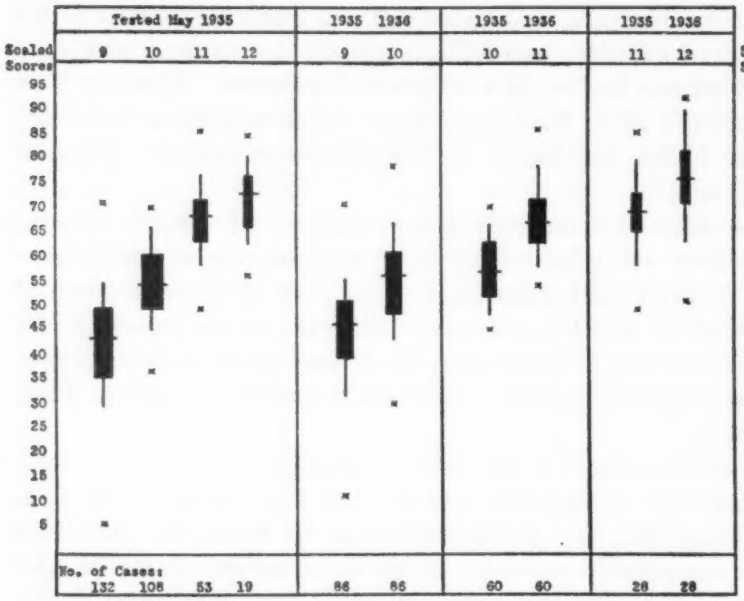


CHART III. Showing the results of a survey of the four Latin grade groups of the Plainfield High School in May, 1935, using the Co-operative Latin Tests, and the growth shown by the members of these groups who were retested in May, 1936.

III shows the results of a survey of the four Latin grade groups in May, 1935, using the Co-operative Latin Tests, and the growth shown by the members of these groups who were retested in May, 1936. The data on the 132, 108, 53, and 19 pupils in grades 9, 10, 11, and 12 respectively as tested in May, 1935, are shown in the portion of the chart at the left. Part of the gains shown from grade to grade are no doubt accounted for by the fact of retardation and elimination. When one examines the other three columns of the chart, however, one secures a clear picture of the gains which 86, 60, and 28 pupils who were retested in May, 1936, achieved as they progressed from grades 9 to 10, 10 to 11, and 11 to 12 respectively. Here again one is struck, first of all, with the amount of overlapping in the distributions, with a few

pupils in the ninth grade achieving scores superior to approximately 10 per cent of those who had studied Latin for four years. In the second place, it is to be noted that, although distinct gains are made from year to year, those who scored in the lowest quartile of the respective distributions in one year are, on the whole, the same individuals who score in the lowest quartile during the ensuing year. The few exceptions to this observation are readily explained by reference to general scholastic ability as measured by scholastic aptitude tests. It seems safe to generalize, therefore, to the effect that, other things being equal, an individual pupil studying Latin tends to maintain his relative position in the distribution of scores from year to year.

For the 60 pupils in eleventh grade Latin last year we had the results of Co-operative Latin Tests administered in January, 1935; June, 1935; and June, 1936. By studying the score points gained by those who ranked in the upper 16 per cent, the middle 16 per cent, and the lower 16 per cent respectively, we find that from January, 1935, to June, 1935, the average number of score points gained by these groups were as follows:

| | |
|---|---|
| Upper 16% | 28.8 |
| Middle 16% | 19.0 |
| Lower 16% | 11.7 |

The differences in the average number of score points gained by these same groups from June, 1935, to June, 1936, are:

| | |
|---|---|
| Upper 16% | 33.9 |
| Middle 16% | 30.9 |
| Lower 16% | 20.1 |

These results show gains for each group, but significantly larger gains for the upper groups. A similar study of 82 present eleventh grade pupils yields the following gain in average score points from June, 1935, to June, 1936, for the respective groups:

| | |
|---|---|
| Upper 16% | 46.4 |
| Middle 16% | 32.6 |
| Lower 16% | 23.0 |

These data seem to bear out the observation made some centuries ago that "to him that hath shall be given," as well as to indicate to counselors and teachers what are the gains that should be expected from pupils at various levels of the achievement distribution.

From the point of view of guidance these all too limited data are of value principally in indicating the importance of cumulating comparable information on the same pupils over a period of years so as to make possible an adequate answer to this question of the persistence of individual differences. The foregoing samplings seem to point to the persistence of these differences, but are all too limited and tentative to furnish the basis for a reliable answer to this question.

GALEN JONES,
*Principal, Plainfield High School*